



7

-1-

SEQUENCE LISTING

<110> Renner, Wolfgang A.
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Piossek, Christine

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<140> 10/050,902

<141> 2002-01-18

<150> US 60/262,379

<151> 2001-01-19

<150> US 60/288,549

<151> 2001-05-04

<150> US 60/326,998

<151> 2001-10-05

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<151> 2001-11-07

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Asp Glu Lys Ser Ala Leu Gln Thr Glu Ile Ala Asn Leu Leu Lys Glu
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Lys Glu Lys Leu Glu Phe Ile Leu Ala Ala His Gly Gly Cys
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ctgaccgaca ccctgcaggc ggaaaccgac caggtggaag acgaaaaatc cgcgctgcaa 180
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ggtggttgct aagctt 256

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Glu Thr Asp Gln Val Glu Asp Glu Lys Ser Ala Leu Gln Thr Glu Ile
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35 40 45
His Gly Gly Cys
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Ala Leu Ala Gly Phe Ala Thr Val Ala Gln Ala Cys Gly Gly Leu Thr
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gac acc ctg cag gcg gaa acc gac cag gtg gaa gac gaa aaa tcc gcg 147
Asp Thr Leu Gln Ala Glu Thr Asp Gln Val Glu Asp Glu Lys Ser Ala
      30      35      40
ctg caa acc gaa atc gcg aac ctg ctg aaa gaa aaa gaa aag ctg gag 195
Leu Gln Thr Glu Ile Ala Asn Leu Leu Lys Glu Lys Glu Lys Leu Glu
      45      50      55
ttc atc ctg gcg gca cac ggt ggt tgc ggt ggt tct gcg gcc gct 240
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Thr Asp Gln Val Glu Asp Glu Lys Ser Ala Leu Gln Thr Glu Ile Ala
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 Gly Gly Leu Thr Asp Thr Leu Gln Ala Glu Thr Asp Gln Val Glu Asp
 10 15 20

gaa aaa tcc gcg ctg caa acc gaa atc gcg aac ctg ctg aaa gaa aaa 150
 Glu Lys Ser Ala Leu Gln Thr Glu Ile Ala Asn Leu Leu Lys Glu Lys
 25 30 35

gaa aag ctg gag ttc atc ctg gcg gca cac ggt ggt tgc taagctt 196
 Glu Lys Leu Glu Phe Ile Leu Ala Ala His Gly Gly Cys
 40 45 50

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 20 25 30
 Ala Asn Leu Leu Lys Glu Lys Glu Lys Leu Glu Phe Ile Leu Ala Ala
 35 40 45
 His Gly Gly Cys
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 accgaccagg tggaagacga aaaatccgcg ctgcaaaccg aaatcgcgaa cctgctgaaa 120
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 1 5 10 15

Asp Gln Val Glu Asp Glu Lys Ser Ala Leu Gln Thr Glu Ile Ala Asn
 20 25 30
 Leu Leu Lys Glu Lys Glu Lys Leu Glu Phe Ile Leu Ala Ala His Gly
 35 40 45
 Gly Cys Gly Gly Ser Ala Ala Ala
 50 55

<210> 26
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 <212> PRT
 <213> Homo sapiens

<400> 26
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 Cys Leu Pro Trp Leu Gln Glu Gly Ser Ala
 20 25

<210> 27
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 <212> DNA
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 gcacacgggtg gttgctaagc tt 262

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 <212> PRT
 <213> Artificial Sequence

<220>
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 Glu Thr Asp Gln Val Glu Asp Glu Lys Ser Ala Leu Gln Thr Glu Ile
 20 25 30
 Ala Asn Leu Leu Lys Glu Lys Glu Lys Leu Glu Phe Ile Leu Ala Ala
 35 40 45
 His Gly Gly Cys
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ctg ctc tgc ctg ccc tgg ctt caa gag ggc agc gct tgc ggt ggt ctg 96
 Leu Leu Cys Leu Pro Trp Leu Gln Glu Gly Ser Ala Cys Gly Gly Leu
 15 20 25 30

acc gac acc ctg cag gcg gaa acc gac cag gtg gaa gac gaa aaa tcc 144
 Thr Asp Thr Leu Gln Ala Glu Thr Asp Gln Val Glu Asp Glu Lys Ser
 35 40 45

gcg ctg caa acc gaa atc gcg aac ctg ctg aaa gaa aaa gaa aag ctg 192
 Ala Leu Gln Thr Glu Ile Ala Asn Leu Leu Lys Glu Lys Glu Lys Leu
 50 55 60

gag ttc atc ctg gcg gca cac ggt ggt tgc ggt ggt tct gcg gcc gct 240
 Glu Phe Ile Leu Ala Ala His Gly Gly Cys Gly Gly Ser Ala Ala Ala
 65 70 75

gggtgtggga ggcctaagct t 261

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Cys Leu Pro Trp Leu Gln Glu Gly Ser Ala Cys Gly Gly Leu Thr Asp
 20 25 30

Thr Leu Gln Ala Glu Thr Asp Gln Val Glu Asp Glu Lys Ser Ala Leu
 35 40 45

Gln Thr Glu Ile Ala Asn Leu Leu Lys Glu Lys Glu Lys Leu Glu Phe
 50 55 60

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<210> 32
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<400> 32
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ccaccaagct tagcaaccac cgtgtgc

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<210> 42

<211> 58

<212> DNA

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<210> 43

<211> 402

<212> DNA

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<220>

<223> Modified bee venom phospholipase A2

<220>

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<222> (1)..(402)

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ggt	ccg	aac	gaa	ctc	ggc	cgc	ttt	aaa	cac	acc	gac	gca	tgc	tgt	cgc	96
Gly	Pro	Asn	Glu	Leu	Gly	Arg	Phe	Lys	His	Thr	Asp	Ala	Cys	Cys	Arg	
			20					25					30			

acc	cag	gac	atg	tgt	ccg	gac	gtc	atg	tct	gct	ggt	gaa	tct	aaa	cac	144
Thr	Gln	Asp	Met	Cys	Pro	Asp	Val	Met	Ser	Ala	Gly	Glu	Ser	Lys	His	
		35					40					45				

ggg	tta	act	aac	acc	gct	tct	cac	acg	cgt	ctc	agc	tgc	gac	tgc	gac	192
Gly	Leu	Thr	Asn	Thr	Ala	Ser	His	Thr	Arg	Leu	Ser	Cys	Asp	Cys	Asp	
	50					55					60					

gac	aaa	ttc	tac	gac	tgc	ctt	aag	aac	tcc	gcc	gat	acc	atc	tct	tct	240
Asp	Lys	Phe	Tyr	Asp	Cys	Leu	Lys	Asn	Ser	Ala	Asp	Thr	Ile	Ser	Ser	
65					70					75					80	

tac	ttc	gtt	ggt	aaa	atg	tat	ttc	aac	ctg	atc	gat	acc	aaa	tgt	tac	288
Tyr	Phe	Val	Gly	Lys	Met	Tyr	Phe	Asn	Leu	Ile	Asp	Thr	Lys	Cys	Tyr	
				85					90					95		

aaa	ctg	gaa	cac	ccg	gta	acc	ggc	tgc	ggc	gaa	cgt	acc	gaa	ggt	cgc	336
Lys	Leu	Glu	His	Pro	Val	Thr	Gly	Cys	Gly	Glu	Arg	Thr	Glu	Gly	Arg	
			100					105					110			

tgc	ctg	cac	tac	acc	gtt	gac	aaa	tct	aaa	ccg	aaa	gtt	tac	cag	tgg	384
Cys	Leu	His	Tyr	Thr	Val	Asp	Lys	Ser	Lys	Pro	Lys	Val	Tyr	Gln	Trp	

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 Phe Asp Leu Arg Lys Tyr
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 20 25 30
 Thr Gln Asp Met Cys Pro Asp Val Met Ser Ala Gly Glu Ser Lys His
 35 40 45
 Gly Leu Thr Asn Thr Ala Ser His Thr Arg Leu Ser Cys Asp Cys Asp
 50 55 60
 Asp Lys Phe Tyr Asp Cys Leu Lys Asn Ser Ala Asp Thr Ile Ser Ser
 65 70 75 80
 Tyr Phe Val Gly Lys Met Tyr Phe Asn Leu Ile Asp Thr Lys Cys Tyr
 85 90 95
 Lys Leu Glu His Pro Val Thr Gly Cys Gly Glu Arg Thr Glu Gly Arg
 100 105 110
 Cys Leu His Tyr Thr Val Asp Lys Ser Lys Pro Lys Val Tyr Gln Trp
 115 120 125
 Phe Asp Leu Arg Lys Tyr
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<210> 58
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Cys Gly Gly Arg Ile Ala Arg Leu Glu Glu Lys Val Lys Thr Leu Lys
1 5 10 15
Ala Gln Asn Ser Glu Leu Ala Ser Thr Ala Asn Met Leu Arg Glu Gln
20 25 30
Val Ala Gln Leu Lys Gln Lys Val Met Asn His Val Gly Cys
35 40 45

<210> 60
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<220>
<223> FOS amino acid sequence

<400> 60
Cys Gly Gly Leu Thr Asp Thr Leu Gln Ala Glu Thr Asp Gln Val Glu
1 5 10 15
Asp Glu Lys Ser Ala Leu Gln Thr Glu Ile Ala Asn Leu Leu Lys Glu
20 25 30
Lys Glu Lys Leu Glu Phe Ile Leu Ala Ala His Gly Gly Cys
35 40 45

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<220>
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ccggaattca tgtgcggtgg tcggatcgcc cgg 33

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<400> 63
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<210> 64
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38

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<220>
<223> Primer

<400> 73
gttggttgcg gagccgcggg tagcgacctt gtagtcagtt atgtc 45

<210> 74
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 74
cgcgtcccaa gcttctacgg aagcgttgat aggatagg 38

<210> 75
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 75
ctagccgcgg gttgcggtgg tcggatcgcc cgg 33

<210> 76
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 76
cgcggtcccaa gcttttagca accaacgtgg ttcattgac 38

<210> 77
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 77
ccggaattca tggccacact tttaaggagc 30

<210> 78
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 78
cgcggtcccaa gcttttagca accaacgtgg ttcattgac 38

<210> 79
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 79
ccggaattca tggacattga cccttataaa g 31

<210> 80
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 80
cctagagcca cctttgccac catcttctaa attagtaccc acccaggtag c 51

<210> 81
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 81
gaagatggtg gcaaaggtgg ctctagggac ctagtagtca gttatgtc 48

<210> 82
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 82
cgcggtcccaa gcttctaaac aacagtagtc tccggaag 38

<210> 83
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 83
gccgaattcc tagcagctag caccgaattt atctaa 36

<210> 84
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 84
ggttaagtgc acatgagagt gaaggagaaa tat 33

<210> 85
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 85
taaccgaatt caggaggtaa aaagatatgg 30

<210> 86
<211> 35
<212> DNA
<213> Artificial Sequence

<220>

<223> Primer

<400> 86
gaagtaaagc ttttaaccac cgcaaccacc agaag 35

<210> 87
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 87
tcgaatgggc cctcatcttc gtgtgctagt cag 33

<210> 88
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Fos fusion construct

<400> 88
Glu Phe Arg Arg
1

<210> 89
<211> 183
<212> PRT
<213> Hepatitis B virus

<400> 89
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
1 5 10 15
Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
20 25 30
Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
35 40 45
Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
50 55 60
Leu Met Thr Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Ile
65 70 75 80
Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
85 90 95
Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
100 105 110
Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125
Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro

130		135		140
Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr				
145		150		155 160
Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser				
	165		170	175
Gln Ser Arg Gly Ser Gln Cys				
	180			

<210> 90
 <211> 183
 <212> PRT
 <213> Hepatitis B virus

<400> 90
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
1 5 10 15
Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
20 25 30
Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
35 40 45
Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
50 55 60
Leu Met Thr Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Thr
65 70 75 80
Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
85 90 95
Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
100 105 110
Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125
Pro Pro Ala Tyr Arg Pro Thr Asn Ala Pro Ile Leu Ser Thr Leu Pro
130 135 140
Glu Thr Cys Val Ile Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
145 150 155 160
Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
165 170 175
Gln Ser Arg Gly Ser Gln Cys
180

<210> 91
 <211> 212
 <212> PRT
 <213> Hepatitis B virus

<400> 91
 Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr

1	5	10	15
Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile	20	25	30
Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu	35	40	45
Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser	50	55	60
Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His	65	70	75
His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr	85	90	95
Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Ile Ser Arg Asp	100	105	110
Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln	115	120	125
Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val	130	135	140
Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala	145	150	155
Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr	165	170	175
Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro	180	185	190
Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg	195	200	205
Glu Ser Gln Cys	210		

<210> 92
 <211> 212
 <212> PRT
 <213> Hepatitis B virus

<400> 92
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
1 5 10 15
Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
20 25 30
Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
35 40 45
Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Asn Ala Ser
50 55 60
Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
65 70 75 80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
85 90 95
Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Ile Ser Arg Asp
100 105 110
Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
115 120 125
Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
130 135 140
Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145 150 155 160
Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
165 170 175
Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
180 185 190
Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
195 200 205
Glu Ser Gln Cys
210

<210> 93
<211> 183
<212> PRT
<213> Hepatitis B virus

<400> 93
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
1 5 10 15
Ser Phe Leu Pro Thr Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
20 25 30
Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
35 40 45
Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
50 55 60
Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala
65 70 75 80
Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
85 90 95
Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
100 105 110
Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125
Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
130 135 140
Glu Thr Cys Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr

145 150 155 160
 Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
 165 170 175
 Gln Ser Arg Glu Ser Gln Cys
 180

<210> 94
 <211> 212
 <212> PRT
 <213> Hepatitis B virus

<400> 94
 Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
 1 5 10 15
 Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
 20 25 30
 Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
 35 40 45
 Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
 50 55 60
 Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65 70 75 80
 His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp Leu Met Thr
 85 90 95
 Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Val Ser Arg Asp
 100 105 110
 Leu Val Val Ser Tyr Val Asn Thr Asn Val Gly Leu Lys Phe Arg Gln
 115 120 125
 Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
 130 135 140
 Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
 145 150 155 160
 Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
 165 170 175
 Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
 180 185 190
 Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
 195 200 205
 Glu Ser Gln Cys
 210

<210> 95
 <211> 212
 <212> PRT
 <213> Hepatitis B virus

<400> 95
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
1 5 10 15
Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Asp Met Asp Ile
20 25 30
Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
35 40 45
Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
50 55 60
Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
65 70 75 80
His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp Leu Met Thr
85 90 95
Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Val Ser Arg Asp
100 105 110
Leu Val Val Ser Tyr Val Asn Thr Asn Val Gly Leu Lys Phe Arg Gln
115 120 125
Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
130 135 140
Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145 150 155 160
Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
165 170 175
Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
180 185 190
Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
195 200 205
Glu Ser Gln Cys
210

<210> 96
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 96
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
1 5 10 15
Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
20 25 30
Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
35 40 45
Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
50 55 60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro Gln
65 70 75 80
His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
85 90 95
Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Ile Ser Arg Asp
100 105 110
Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
115 120 125
Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
130 135 140
Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145 150 155 160
Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
165 170 175
Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
180 185 190
Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
195 200 205
Glu Ser Gln Cys
210

<210> 97
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 97
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
1 5 10 15
Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
20 25 30
Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
35 40 45
Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
50 55 60
Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
65 70 75 80
His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
85 90 95
Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp
100 105 110
Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
115 120 125
Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val

130		135		140
Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala				
145		150	155	160
Tyr Lys Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr				
	165		170	175
Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro				
	180	185		190
Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg				
	195	200	205	
Gly Ser Gln Cys				
210				

<210> 98
 <211> 183
 <212> PRT
 <213> Hepatitis B virus

<400> 98
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
1 5 10 15
Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
20 25 30
Thr Ala Ser Ala Leu Phe Arg Asp Ala Leu Glu Ser Pro Glu His Cys
35 40 45
Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
50 55 60
Leu Met Thr Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Ala
65 70 75 80
Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
85 90 95
Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
100 105 110
Asp Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125
Pro Pro Ala Tyr Arg Pro Ser Asn Ala Pro Ile Leu Ser Thr Leu Pro
130 135 140
Glu Thr Cys Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
145 150 155 160
Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
165 170 175
Gln Ser Arg Glu Ser Gln Cys
180

<210> 99

<211> 183
 <212> PRT
 <213> Hepatitis B virus

<400> 99
 Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
 1 5 10 15
 Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
 20 25 30
 Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
 35 40 45
 Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
 50 55 60
 Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala
 65 70 75 80
 Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
 85 90 95
 Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
 100 105 110
 Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
 115 120 125
 Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
 130 135 140
 Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
 145 150 155 160
 Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
 165 170 175
 Gln Ser Arg Glu Ser Gln Cys
 180

<210> 100
 <211> 212
 <212> PRT
 <213> Hepatitis B virus

<400> 100
 Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
 1 5 10 15
 Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
 20 25 30
 Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
 35 40 45
 Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
 50 55 60
 Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65 70 75 80

His Thr Ala Leu Arg His Ala Ile Leu Cys Trp Gly Asp Leu Arg Thr
85 90 95
Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Ile Ser Arg Asp
100 105 110
Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
115 120 125
Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
130 135 140
Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145 150 155 160
Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
165 170 175
Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
180 185 190
Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
195 200 205
Glu Ser Gln Cys
210

<210> 101
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 101
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
1 5 10 15
Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Asp Met Asp Ile
20 25 30
Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
35 40 45
Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
50 55 60
Ala Leu Phe Arg Asp Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
65 70 75 80
His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
85 90 95
Leu Ala Thr Trp Val Gly Ala Asn Leu Glu Asp Pro Ala Ser Arg Asp
100 105 110
Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
115 120 125
Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
130 135 140
Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Gln Ala

145 150 155 160
 Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Cys
 165 170 175
 Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
 180 185 190
 Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
 195 200 205
 Glu Ser Gln Cys
 210

<210> 102
 <211> 183
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic human Hepatitis B construct

<400> 102
 Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
 1 5 10 15
 Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
 20 25 30
 Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
 35 40 45
 Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
 50 55 60
 Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala
 65 70 75 80
 Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
 85 90 95
 Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
 100 105 110
 Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
 115 120 125
 Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
 130 135 140
 Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
 145 150 155 160
 Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
 165 170 175
 Gln Ser Arg Glu Ser Gln Cys
 180

<210> 103

<211> 212
 <212> PRT
 <213> Hepatitis B virus

<400> 103
 Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
 1 5 10 15
 Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
 20 25 30
 Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
 35 40 45
 Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
 50 55 60
 Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65 70 75 80
 His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp Leu Met Ser
 85 90 95
 Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ile Ser Arg Asp
 100 105 110
 Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
 115 120 125
 Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
 130 135 140
 Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
 145 150 155 160
 Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
 165 170 175
 Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
 180 185 190
 Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
 195 200 205
 Glu Ser Gln Cys
 210

<210> 104
 <211> 183
 <212> PRT
 <213> Hepatitis B virus

<400> 104
 Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
 1 5 10 15
 Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
 20 25 30
 Thr Ala Ser Ala Leu Tyr Arg Asp Ala Leu Glu Ser Pro Glu His Cys
 35 40 45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
50 55 60
Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala
65 70 75 80
Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
85 90 95
Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
100 105 110
Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125
Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
130 135 140
Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
145 150 155 160
Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
165 170 175
Gln Ser Arg Glu Ser Gln Cys
180

<210> 105
<211> 183
<212> PRT
<213> Hepatitis B virus

<400> 105
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
1 5 10 15
Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
20 25 30
Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
35 40 45
Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp
50 55 60
Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala
65 70 75 80
Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
85 90 95
Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
100 105 110
Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125
Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
130 135 140
Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr

145 150 155 160
 Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
 165 170 175

Gln Ser Arg Glu Ser Gln Cys
 180

<210> 106
 <211> 183
 <212> PRT
 <213> Hepatitis B virus

<400> 106
 Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
 1 5 10 15
 Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
 20 25 30
 Thr Ala Ser Ala Leu Tyr Arg Asp Ala Leu Glu Ser Pro Glu His Cys
 35 40 45
 Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
 50 55 60
 Leu Met Thr Leu Ala Thr Trp Val Gly Ala Asn Leu Glu Asp Pro Ala
 65 70 75 80
 Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
 85 90 95
 Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
 100 105 110
 Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
 115 120 125
 Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
 130 135 140
 Glu Thr Thr Val Val Arg Arg Arg Gly Arg Thr Pro Arg Arg Arg Thr
 145 150 155 160
 Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
 165 170 175
 Gln Ser Arg Glu Ser Gln Cys
 180

<210> 107
 <211> 212
 <212> PRT
 <213> Hepatitis B virus

<400> 107
 Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
 1 5 10 15
 Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile

20										25					30														
Asp	Pro	Tyr	Lys	Glu	Phe	Gly	Ala	Thr	Val	Glu	Leu	Leu	Ser	Phe	Leu														
		35					40					45																	
Pro	Ser	Asp	Phe	Phe	Pro	Ser	Val	Arg	Asp	Leu	Leu	Asp	Thr	Ala	Ser														
	50					55					60																		
Ala	Leu	Tyr	Arg	Asp	Ala	Leu	Glu	Ser	Pro	Glu	His	Cys	Ser	Pro	His														
65					70					75					80														
His	Thr	Ala	Leu	Arg	Gln	Ala	Ile	Leu	Cys	Trp	Gly	Glu	Leu	Met	Thr														
				85					90					95															
Leu	Ala	Thr	Trp	Val	Gly	Val	Asn	Leu	Glu	Asp	Pro	Ala	Ser	Arg	Asp														
			100					105					110																
Leu	Val	Val	Ser	Tyr	Val	Asn	Thr	Asn	Met	Gly	Leu	Lys	Phe	Arg	Gln														
		115					120					125																	
Leu	Leu	Trp	Phe	His	Ile	Ser	Cys	Leu	Thr	Phe	Gly	Arg	Glu	Thr	Val														
	130					135					140																		
Ile	Glu	Tyr	Leu	Val	Ser	Phe	Gly	Val	Trp	Ile	Arg	Thr	Pro	Pro	Ala														
145					150					155					160														
Tyr	Arg	Pro	Pro	Asn	Ala	Pro	Ile	Leu	Ser	Thr	Leu	Pro	Glu	Thr	Thr														
				165					170					175															
Val	Val	Arg	Arg	Arg	Gly	Arg	Ser	Pro	Arg	Arg	Arg	Thr	Pro	Ser	Pro														
			180					185					190																
Arg	Arg	Arg	Arg	Ser	Gln	Ser	Pro	Arg	Arg	Arg	Arg	Ser	Gln	Ser	Arg														
		195					200					205																	
Glu	Ser	Gln	Cys																										
	210																												

<210> 108
 <211> 212
 <212> PRT
 <213> Hepatitis B virus

<400> 108															
Met	Gln	Leu	Phe	His	Leu	Cys	Leu	Ile	Ile	Ser	Cys	Ser	Cys	Pro	Thr
1				5					10					15	
Val	Gln	Ala	Ser	Lys	Leu	Cys	Leu	Gly	Trp	Leu	Trp	Gly	Met	Asp	Ile
			20					25					30		
Asp	Pro	Tyr	Lys	Glu	Phe	Gly	Ala	Thr	Val	Glu	Leu	Leu	Ser	Phe	Leu
		35					40					45			
Pro	Ser	Asp	Phe	Phe	Pro	Ser	Val	Arg	Asp	Leu	Leu	Asp	Thr	Ala	Ser
	50					55					60				
Ala	Leu	Tyr	Arg	Glu	Ala	Leu	Glu	Ser	Pro	Glu	His	Cys	Ser	Pro	His
65					70					75					80
His	Thr	Ala	Leu	Arg	Gln	Ala	Ile	Leu	Cys	Trp	Gly	Asp	Leu	Met	Thr
				85					90					95	

Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp
100 105 110

Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
115 120 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
130 135 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145 150 155 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
165 170 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
180 185 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
195 200 205

Glu Ser Gln Cys
210

<210> 109
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 109
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Thr Cys Pro Thr
1 5 10 15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
20 25 30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
35 40 45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
50 55 60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
65 70 75 80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
85 90 95

Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp
100 105 110

Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
115 120 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
130 135 140

Ile Glu Tyr Leu Val Ala Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145 150 155 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr

165 170 175
Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
180 185 190
Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
195 200 205
Glu Ser Gln Cys
210

<210> 110
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 110
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
1 5 10 15
Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
20 25 30
Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
35 40 45
Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
50 55 60
Ala Leu Tyr Arg Glu Ala Phe Glu Cys Ser Glu His Cys Ser Pro His
65 70 75 80
His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
85 90 95
Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Ile Ser Arg Asp
100 105 110
Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
115 120 125
Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
130 135 140
Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145 150 155 160
Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
165 170 175
Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
180 185 190
Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
195 200 205
Glu Ser Gln Cys
210

<210> 111
<211> 212

<212> PRT
<213> Hepatitis B virus

<220>
<221> UNSURE
<222> 28
<223> Xaa may be any amino acid.

<400> 111
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
1 5 10 15
Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Xaa Asp Met Asp Ile
20 25 30
Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
35 40 45
Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
50 55 60
Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
65 70 75 80
His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp Leu Ile Thr
85 90 95
Leu Ser Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Thr Ser Arg Asp
100 105 110
Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
115 120 125
Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
130 135 140
Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145 150 155 160
Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
165 170 175
Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
180 185 190
Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Thr Gln Ser Arg
195 200 205
Glu Ser Gln Cys
210

<210> 112
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 112
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
1 5 10 15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
20 25 30
Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
35 40 45
Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Asn Ala Ser
50 55 60
Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
65 70 75 80
His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
85 90 95
Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp
100 105 110
Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
115 120 125
Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
130 135 140
Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145 150 155 160
Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
165 170 175
Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
180 185 190
Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
195 200 205
Glu Ser Gln Cys
210

<210> 113
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 113
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
1 5 10 15
Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
20 25 30
Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
35 40 45
Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
50 55 60
Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
65 70 75 80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
85 90 95
Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp
100 105 110
Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
115 120 125
Leu Leu Trp Phe His Ile Cys Cys Leu Thr Phe Gly Arg Glu Thr Val
130 135 140
Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145 150 155 160
Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
165 170 175
Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
180 185 190
Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
195 200 205
Glu Ser Gln Cys
210

<210> 114
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 114
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
1 5 10 15
Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
20 25 30
Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
35 40 45
Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
50 55 60
Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
65 70 75 80
His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
85 90 95
Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp
100 105 110
Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
115 120 125
Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
130 135 140
Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala

[illegible]

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<210> 115
<211> 212
<212> PRT
<213> Hepatitis B virus
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[illegible]

210

<210> 116
 <211> 212
 <212> PRT
 <213> Hepatitis B virus

<400> 116
 Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
 1 5 10 15
 Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
 20 25 30
 Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
 35 40 45
 Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
 50 55 60
 Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65 70 75 80
 His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
 85 90 95
 Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp
 100 105 110
 Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
 115 120 125
 Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
 130 135 140
 Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
 145 150 155 160
 Tyr Arg Pro Pro Asn Ala Pro Ile Leu Leu Thr Leu Pro Glu Thr Thr
 165 170 175
 Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
 180 185 190
 Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
 195 200 205
 Glu Ser Gln Cys
 210

<210> 117
 <211> 212
 <212> PRT
 <213> Hepatitis B virus

<400> 117
 Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
 1 5 10 15
 Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile

20					25					30					
Asp	Pro	Tyr	Lys	Glu	Phe	Gly	Ala	Thr	Val	Glu	Leu	Leu	Ser	Phe	Leu
		35					40					45			
Pro	Ser	Asp	Phe	Phe	Pro	Ser	Val	Arg	Asp	Leu	Leu	Asp	Thr	Ala	Ser
	50					55					60				
Ala	Leu	Tyr	Arg	Glu	Ala	Leu	Glu	Ser	Pro	Glu	His	Cys	Ser	Pro	His
65					70					75					80
His	Thr	Ala	Leu	Arg	Gln	Ala	Ile	Leu	Cys	Trp	Gly	Asp	Leu	Met	Thr
			85						90					95	
Leu	Ala	Thr	Trp	Val	Gly	Val	Asn	Leu	Glu	Asp	Pro	Ala	Ser	Arg	Asp
			100					105					110		
Leu	Val	Val	Ser	Tyr	Val	Asn	Thr	Asn	Met	Gly	Leu	Lys	Phe	Lys	Gln
	115						120					125			
Leu	Leu	Trp	Phe	His	Ile	Ser	Cys	Leu	Thr	Phe	Gly	Arg	Glu	Thr	Val
130						135					140				
Ile	Glu	Tyr	Leu	Val	Ser	Phe	Gly	Val	Trp	Ile	Arg	Thr	Pro	Pro	Ala
145					150					155					160
Tyr	Arg	Pro	Pro	Asn	Ala	Pro	Ile	Leu	Ser	Thr	Leu	Pro	Glu	Thr	Thr
				165					170					175	
Val	Val	Arg	Arg	Arg	Gly	Arg	Ser	Pro	Arg	Arg	Arg	Thr	Pro	Ser	Pro
			180					185					190		
Arg	Arg	Arg	Arg	Ser	Gln	Ser	Pro	Arg	Arg	Arg	Arg	Ser	Gln	Ser	Arg
		195					200					205			
Glu	Ser	Gln	Cys												
210															

<210> 118
 <211> 212
 <212> PRT
 <213> Hepatitis B virus

<400> 118
 Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
 1 5 10 15
 Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
 20 25 30
 Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
 35 40 45
 Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ala
 50 55 60
 Ala Leu Tyr Arg Asp Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65 70 75 80
 His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
 85 90 95

Leu Ala Thr Trp Val Gly Thr Asn Leu Glu Asp Pro Ala Ser Arg Asp
100 105 110

Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
115 120 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
130 135 140

Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145 150 155 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
165 170 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
180 185 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
195 200 205

Glu Ser Gln Cys
210

<210> 119
<211> 183
<212> PRT
<213> Hepatitis B virus

<400> 119
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Ser Met Glu Leu Leu
1 5 10 15

Ser Phe Leu Pro Ser Asp Phe Tyr Pro Ser Val Arg Asp Leu Leu Asp
20 25 30

Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
35 40 45

Thr Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
50 55 60

Leu Met Thr Leu Ala Thr Trp Val Gly Gly Asn Leu Gln Asp Pro Thr
65 70 75 80

Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
85 90 95

Phe Arg Gln Leu Leu Trp Phe His Val Ser Cys Leu Thr Phe Gly Arg
100 105 110

Glu Thr Val Val Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125

Pro Gln Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
130 135 140

Glu Thr Cys Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
145 150 155 160

Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Ser

	165	170	175
Gln Ser Arg Glu Ser Gln Cys			
180			
<210> 120			
<211> 183			
<212> PRT			
<213> Hepatitis B virus			
<400> 120			
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu			
1 5 10 15			
Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp			
20 25 30			
Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys			
35 40 45			
Ser Pro His His Thr Ala Leu Arg His Val Phe Leu Cys Trp Gly Asp			
50 55 60			
Leu Met Thr Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Thr			
65 70 75 80			
Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys			
85 90 95			
Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg			
100 105 110			
Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr			
115 120 125			
Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro			
130 135 140			
Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr			
145 150 155 160			
Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser			
165 170 175			
Gln Ser Arg Glu Ser Gln Cys			
180			

<210> 121
 <211> 212
 <212> PRT
 <213> Hepatitis B virus

<400> 121
 Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
 1 5 10 15
 Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
 20 25 30
 Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu

35					40					45					
Pro	Ser	Asp	Phe	Phe	Pro	Ser	Val	Arg	Asp	Leu	Leu	Asp	Thr	Ala	Ser
	50					55					60				
Ala	Leu	Tyr	Arg	Glu	Ala	Leu	Glu	Ser	Pro	Glu	His	Cys	Ser	Pro	His
65					70					75					80
His	Thr	Ala	Leu	Arg	Gln	Ala	Ile	Leu	Cys	Trp	Gly	Asp	Leu	Thr	Thr
				85					90					95	
Leu	Ala	Thr	Trp	Val	Gly	Val	Asn	Leu	Glu	Asp	Pro	Ala	Ser	Arg	Asp
			100					105					110		
Leu	Val	Val	Ser	Tyr	Val	Asn	Thr	Asn	Met	Gly	Leu	Lys	Phe	Arg	Gln
		115					120					125			
Leu	Leu	Trp	Phe	His	Ile	Ser	Cys	Leu	Thr	Phe	Gly	Arg	Glu	Thr	Val
130						135					140				
Ile	Glu	Tyr	Leu	Val	Ser	Phe	Gly	Val	Trp	Ile	Arg	Thr	Pro	Pro	Ala
145						150					155				160
Tyr	Arg	Pro	Pro	Asn	Ala	Pro	Ile	Leu	Ser	Thr	Leu	Pro	Glu	Thr	Thr
				165					170					175	
Val	Val	Arg	Arg	Arg	Gly	Arg	Ser	Pro	Arg	Arg	Arg	Thr	Pro	Ser	Pro
			180					185					190		
Arg	Arg	Arg	Arg	Ser	Gln	Ser	Pro	Arg	Arg	Arg	Arg	Ser	Gln	Ser	Arg
		195					200					205			
Glu	Ser	Gln	Cys												
	210														

<210> 122
 <211> 212
 <212> PRT
 <213> Hepatitis B virus

<400> 122															
Met	Gln	Leu	Phe	His	Leu	Cys	Leu	Ile	Ile	Ser	Cys	Ser	Cys	Pro	Thr
1				5					10					15	
Val	Gln	Ala	Ser	Lys	Leu	Cys	Leu	Gly	Trp	Leu	Trp	Gly	Met	Asp	Ile
			20					25					30		
Asp	Pro	Tyr	Lys	Glu	Phe	Gly	Ala	Thr	Val	Glu	Leu	Leu	Ser	Phe	Leu
		35					40					45			
Pro	Ser	Asp	Phe	Phe	Pro	Ser	Val	Arg	Asp	Leu	Leu	Asp	Thr	Ala	Ser
	50					55					60				
Ala	Leu	Tyr	Arg	Asp	Ala	Leu	Glu	Ser	Pro	Glu	His	Cys	Ser	Pro	His
65					70					75					80
His	Thr	Ala	Leu	Arg	Gln	Ala	Ile	Leu	Cys	Trp	Gly	Glu	Leu	Met	Thr
				85					90					95	
Leu	Ala	Thr	Trp	Val	Gly	Val	Asn	Leu	Glu	Asp	Pro	Ala	Ser	Arg	Asp
			100					105					110		

Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
115 120 125
Leu Leu Trp Phe His Ile Ser Cys Leu Ile Phe Gly Arg Glu Thr Val
130 135 140
Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145 150 155 160
Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
165 170 175
Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
180 185 190
Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
195 200 205
Glu Ser Gln Cys
210

<210> 123
<211> 183
<212> PRT
<213> Hepatitis B virus

<400> 123
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
1 5 10 15
Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
20 25 30
Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
35 40 45
Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp
50 55 60
Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Val
65 70 75 80
Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Val Gly Leu Lys
85 90 95
Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
100 105 110
Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125
Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
130 135 140
Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
145 150 155 160
Pro Ser Pro Ala Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
165 170 175
Gln Ser Arg Glu Ser Gln Cys

180

<210> 124
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 124
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
1 5 10 15
Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
20 25 30
Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
35 40 45
Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
50 55 60
Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
65 70 75 80
His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp Leu Met Asn
85 90 95
Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Val Ser Arg Asp
100 105 110
Leu Val Val Gly Tyr Val Asn Thr Thr Val Gly Leu Lys Phe Arg Gln
115 120 125
Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
130 135 140
Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145 150 155 160
Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
165 170 175
Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
180 185 190
Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
195 200 205
Glu Ser Gln Cys
210

<210> 125
<211> 183
<212> PRT
<213> Hepatitis B virus

<400> 125
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
1 5 10 15
Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp

20					25					30					
Thr	Ala	Ser	Ala	Leu	Tyr	Arg	Asp	Ala	Leu	Glu	Ser	Pro	Glu	His	Cys
		35					40					45			
Ser	Pro	His	His	Thr	Ala	Leu	Arg	Gln	Ala	Ile	Leu	Cys	Trp	Gly	Asp
	50					55					60				
Leu	Met	Thr	Leu	Ala	Thr	Trp	Val	Gly	Val	Asn	Leu	Glu	Asp	Pro	Ala
65					70					75					80
Ser	Arg	Asp	Leu	Val	Val	Ser	Tyr	Val	Asn	Thr	Asn	Met	Gly	Leu	Lys
				85					90					95	
Phe	Arg	Gln	Leu	Leu	Trp	Phe	His	Ile	Ser	Cys	Leu	Thr	Phe	Gly	Arg
			100					105						110	
Glu	Thr	Val	Ile	Glu	Tyr	Leu	Val	Ser	Phe	Gly	Val	Trp	Ile	Arg	Thr
		115					120					125			
Pro	Pro	Ala	Tyr	Arg	Pro	Pro	Asn	Ala	Pro	Ile	Leu	Ser	Thr	Leu	Pro
	130					135					140				
Glu	Thr	Thr	Val	Val	Arg	Arg	Arg	Gly	Arg	Thr	Pro	Arg	Arg	Arg	Thr
145					150					155					160
Pro	Ser	Pro	Arg	Arg	Arg	Arg	Ser	Gln	Ser	Pro	Arg	Arg	Arg	Arg	Ser
				165					170					175	
Gln	Ser	Arg	Glu	Ser	Gln	Cys									
			180												

<210> 126
 <211> 212
 <212> PRT
 <213> Hepatitis B virus

<400> 126

Met	Gln	Leu	Phe	His	Leu	Cys	Leu	Ile	Ile	Ser	Cys	Ser	Cys	Pro	Thr
1				5					10					15	
Val	Gln	Ala	Ser	Lys	Leu	Cys	Leu	Gly	Trp	Leu	Trp	Gly	Met	Asp	Ile
			20					25					30		
Asp	Pro	Tyr	Lys	Glu	Phe	Gly	Ala	Thr	Val	Glu	Leu	Leu	Ser	Phe	Leu
		35					40					45			
Pro	Ser	Asp	Phe	Phe	Pro	Ser	Val	Arg	Ala	Leu	Leu	Asp	Thr	Ala	Ser
	50					55					60				
Ala	Leu	Tyr	Arg	Glu	Ala	Leu	Glu	Ser	Pro	Glu	His	Cys	Ser	Pro	His
65					70				75					80	
His	Thr	Ala	Leu	Arg	Gln	Ala	Ile	Leu	Cys	Trp	Gly	Glu	Leu	Met	Thr
				85				90					95		
Leu	Ala	Thr	Trp	Val	Gly	Val	Asn	Leu	Glu	Asp	Pro	Ala	Ser	Arg	Asp
			100					105					110		
Leu	Val	Val	Ser	Tyr	Val	Asn	Thr	Asn	Met	Gly	Leu	Lys	Phe	Arg	Gln
		115					120					125			

Ile Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
 130 135 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
 145 150 155 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
 165 170 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
 180 185 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
 195 200 205

Glu Ser Gln Cys
 210

<210> 127
 <211> 212
 <212> PRT
 <213> Hepatitis B virus

<400> 127
 Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
 1 5 10 15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
 20 25 30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
 35 40 45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
 50 55 60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65 70 75 80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp Leu Met Thr
 85 90 95

Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Thr Arg Asp
 100 105 110

Leu Val Val Ser Tyr Val Asn Thr Asn Val Gly Leu Lys Phe Arg Gln
 115 120 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
 130 135 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
 145 150 155 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
 165 170 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
 180 185 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg

195	200	205
Glu Ser Gln Cys		
210		
<210> 128		
<211> 212		
<212> PRT		
<213> Hepatitis B virus		
<400> 128		
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr		
1 5 10 15		
Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile		
20 25 30		
Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu		
35 40 45		
Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser		
50 55 60		
Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His		
65 70 75 80		
His Thr Ala Leu Arg Gln Arg Ile Leu Cys Trp Gly Glu Leu Met Thr		
85 90 95		
Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp		
100 105 110		
Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln		
115 120 125		
Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val		
130 135 140		
Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala		
145 150 155 160		
Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr		
165 170 175		
Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro		
180 185 190		
Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Thr Arg Ser Gln Ser Arg		
195 200 205		
Glu Ser Gln Cys		
210		

<210> 129
 <211> 212
 <212> PRT
 <213> Hepatitis B virus
 <400> 129

Met Gln Leu Phe His Leu Cys Leu Val Ile Ser Cys Ser Cys Pro Thr
1 5 10 15
Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
20 25 30
Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
35 40 45
Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ala
50 55 60
Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
65 70 75 80
His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
85 90 95
Leu Ala Thr Trp Val Gly Asn Asn Leu Glu Asp Pro Ala Ser Arg Asp
100 105 110
Leu Val Val Asn Tyr Val Asn Thr Asn Met Gly Leu Lys Ile Arg Gln
115 120 125
Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
130 135 140
Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145 150 155 160
Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
165 170 175
Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
180 185 190
Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
195 200 205
Glu Ser Gln Cys
210

<210> 130
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 130
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
1 5 10 15
Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
20 25 30
Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
35 40 45
Pro Ser Ala Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
50 55 60
Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His

65		70		75		80
His Thr Ala Leu Arg	Gln Ala Ile Leu Cys	Trp Gly Asp Leu Met Thr				
	85	90			95	
Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp						
	100	105			110	
Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln						
	115	120			125	
Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val						
	130	135			140	
Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala						
	145	150			155	160
Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr						
	165	170				175
Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro						
	180	185				190
Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg						
	195	200			205	
Glu Ser Gln Cys						
	210					

<210> 131
 <211> 183
 <212> PRT
 <213> Hepatitis B virus

<400> 131
 Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
 1 5 10 15
 Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
 20 25 30
 Thr Ala Ala Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
 35 40 45
 Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
 50 55 60
 Leu Met Thr Leu Ala Thr Trp Val Gly Asn Asn Leu Glu Asp Pro Ala
 65 70 75 80
 Ser Arg Asp Leu Val Val Asn Tyr Val Asn Thr Asn Met Gly Leu Lys
 85 90 95
 Ile Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
 100 105 110
 Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
 115 120 125
 Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
 130 135 140

Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
145 150 155 160

Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
165 170 175

Gln Ser Arg Glu Ser Gln Cys
180

<210> 132

<211> 183

<212> PRT

<213> Hepatitis B virus

<400> 132

Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
1 5 10 15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
20 25 30

Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
35 40 45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
50 55 60

Leu Met Thr Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Ile
65 70 75 80

Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
85 90 95

Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
100 105 110

Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
130 135 140

Glu Thr Cys Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
145 150 155 160

Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
165 170 175

Gln Ser Arg Gly Ser Gln Cys
180

<210> 133

<211> 3221

<212> DNA

<213> Hepatitis B virus

<220>

<221> CDS

<222> (1901)..(2458)

<400> 133

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aatctccgcg aggactgggg accctgtgac gaacatggag aacatcacat caggattcct 180
aggacccctg ctctgtttac aggcgggggt tttattgttg acaagaatcc tcacaatacc 240
gcagagtcta gactcgtggg ggaacttctc caattttata gggggatcac ccgtgtgtct 300
tggccaaaat tcgcagtccc caaocctcaa tcaactacca acctcctgtc ctccaatttg 360
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aggcaactct atgtttccct catgttgctg tacaaaacct acggttgga attgcacctg 600
tattcccatc ccctcgtcct gggctttcgc aaaataccta tgggagtggg cctcagtcog 660
tttctcttgg ctcatgttac tagtgccatt tgttcagtgg ttcgtagggc tttccccac 720
tgtttgctt tcagctatat ggatgatgtg gtattggggg ccaagtctgt acagcatcgt 780
gagtccttt ataccgctgt taccaatttt cttttgtctc tgggtataca tttaaaccct 840
aacaaaacaa aaagatgggg ttattcccta aacttcatgg gttacataat tggaagttgg 900
ggaacattgc cacaggatca tattgtacaa aagatcaaac actgttttag aaaacttct 960
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tgaacgcca tcagatcctg cccaaggtct tacataagag gactcttgga ctcccagcaa 1680
tgtcaacgac cgaccttgag gcctacttca aagactgtgt gtttaaggac tgggaggagc 1740
tgggggagga gattagggtta aaggtctttg tattaggagg ctgtaggcat aaattggtct 1800
gcgcaccagc accatgcaac tttttcacct ctgcctaata atctcttgta catgtccac 1860

tgttcaagcc	tccaagctgt	gccttgggtg	gctttggggc	atg	gac	att	gac	cct	1915
				Met	Asp	Ile	Asp	Pro	
				1				5	
tat	aaa	gaa	ttt	gga	gct	act	gtg	gag	1963
Tyr	Lys	Glu	Phe	Gly	Ala	Thr	Val	Glu	
				10				15	
								20	
gac	ttc	ttt	cct	tcc	gtc	aga	gat	ctc	2011
Asp	Phe	Phe	Pro	Ser	Val	Arg	Asp	Leu	
			25					30	
								35	
tat	cga	gaa	gcc	tta	gag	tct	cct	gag	2059
Tyr	Arg	Glu	Ala	Leu	Glu	Ser	Pro	Glu	
		40					45		
								50	
gca	ctc	agg	caa	gcc	att	ctc	tgc	tgg	2107
Ala	Leu	Arg	Gln	Ala	Ile	Leu	Cys	Trp	
	55					60			
								65	
acc	tgg	gtg	ggt	aat	aat	ttg	gaa	gat	2155
Thr	Trp	Val	Gly	Asn	Asn	Leu	Glu	Asp	
	70				75			80	
								85	
gtc	aat	tat	gtt	aat	act	aac	atg	ggt	2203
Val	Asn	Tyr	Val	Asn	Thr	Asn	Met	Gly	
				90				95	
								100	
tgg	ttt	cat	ata	tct	tgc	ctt	act	ttt	2251
Trp	Phe	His	Ile	Ser	Cys	Leu	Thr	Phe	
			105					110	
								115	
tat	ttg	gtc	tct	ttc	gga	gtg	tgg	att	2299
Tyr	Leu	Val	Ser	Phe	Gly	Val	Trp	Ile	
	120						125		
								130	
cca	cca	aat	gcc	cct	atc	tta	tca	aca	2347
Pro	Pro	Asn	Ala	Pro	Ile	Leu	Ser	Thr	
	135					140			
								145	
aga	cga	cgg	gac	cga	ggc	agg	tcc	cct	2395
Arg	Arg	Arg	Asp	Arg	Gly	Arg	Ser	Pro	
150					155			160	
								165	
cgc	aga	cgc	aga	tct	caa	tcg	ccg	cgt	2443
Arg	Arg	Arg	Arg	Ser	Gln	Ser	Pro	Arg	
				170				175	
								180	
gaa	tct	caa	tgt	tag	tattccttgg	actcataagg	tgggaaactt	tactgggctt	2498
Glu	Ser	Gln	Cys						
			185						
tattcctcta	cagtacctat	ctttaatcct	gaatggcaaa	ctccttcctt	tcctaagatt	2558			
catttacaag	aggacattat	tgataggtgt	caacaatttg	tgggccctct	cactgtaaat	2618			
gaaaagagaa	gattgaaatt	aattatgcct	gctagattct	atcctaccca	cactaaatat	2678			
ttgcccttag	acaaaggaat	taaacccttat	tatccagatc	aggtagttaa	tcattacttc	2738			
caaaccagac	attattttaca	tactcttttg	aaggctggta	ttctatataa	gagggaaacc	2798			

acacgtagcg catcattttg cgggtcacca tattcttggg aacaagagct acagcatggg 2858
 aggttggtca ttaaaacctc gcaaaggcat ggggacgaat ctttctgttc ccaacctctt 2918
 gggattcttt cccgatcatc agttggaccc tgcattcgga gccaactcaa acaatccaga 2978
 ttgggacttc aaccccatca aggaccactg gccagcagcc aaccaggtag gagtgggagc 3038
 attcggggcca ggggtcaccc ctccacacgg cggtatTTTTg ggggtggagcc ctcaggctca 3098
 gggcatattg accacagtgt caacaattcc tcctcctgcc tccaccaatc ggcagtcagg 3158
 aaggcagcct actcccatct ctccacctct aagagacagt catcctcagg ccatgcagtg 3218
 gaa 3221

<210> 134
 <211> 185
 <212> PRT
 <213> Hepatitis B virus

<400> 134
 Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
 1 5 10 15
 Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
 20 25 30
 Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
 35 40 45
 Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
 50 55 60
 Leu Met Thr Leu Ala Thr Trp Val Gly Asn Asn Leu Glu Asp Pro Ala
 65 70 75 80
 Ser Arg Asp Leu Val Val Asn Tyr Val Asn Thr Asn Met Gly Leu Lys
 85 90 95
 Ile Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
 100 105 110
 Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
 115 120 125
 Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
 130 135 140
 Glu Thr Thr Val Val Arg Arg Arg Asp Arg Gly Arg Ser Pro Arg Arg
 145 150 155 160
 Arg Thr Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg
 165 170 175
 Arg Ser Gln Ser Arg Glu Ser Gln Cys
 180 185

<210> 135
 <211> 188
 <212> PRT
 <213> Woodchuck hepatitis B virus

<400> 135
 Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ser Ser Tyr Gln Leu Leu
 1 5 10 15
 Asn Phe Leu Pro Leu Asp Phe Phe Pro Asp Leu Asn Ala Leu Val Asp
 20 25 30

Thr Ala Thr Ala Leu Tyr Glu Glu Glu Leu Thr Gly Arg Glu His Cys
35 40 45

Ser Pro His His Thr Ala Ile Arg Gln Ala Leu Val Cys Trp Asp Glu
50 55 60

Leu Thr Lys Leu Ile Ala Trp Met Ser Ser Asn Ile Thr Ser Glu Gln
65 70 75 80

Val Arg Thr Ile Ile Val Asn His Val Asn Asp Thr Trp Gly Leu Lys
85 90 95

Val Arg Gln Ser Leu Trp Phe His Leu Ser Cys Leu Thr Phe Gly Gln
100 105 110

His Thr Val Gln Glu Phe Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125

Pro Ala Pro Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
130 135 140

Glu His Thr Val Ile Arg Arg Arg Gly Gly Ala Arg Ala Ser Arg Ser
145 150 155 160

Pro Arg Arg Arg Thr Pro Ser Pro Arg Arg Arg Ser Gln Ser Pro
165 170 175

Arg Arg Arg Arg Ser Gln Ser Pro Ser Thr Asn Cys
180 185

<210> 136
<211> 217
<212> PRT
<213> Ground squirrel hepatitis virus

<400> 136
Met Tyr Leu Phe His Leu Cys Leu Val Phe Ala Cys Val Pro Cys Pro
1 5 10 15

Thr Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Asp Met Asp
20 25 30

Ile Asp Pro Tyr Lys Glu Phe Gly Ser Ser Tyr Gln Leu Leu Asn Phe
35 40 45

Leu Pro Leu Asp Phe Phe Pro Asp Leu Asn Ala Leu Val Asp Thr Ala
50 55 60

Ala Ala Leu Tyr Glu Glu Glu Leu Thr Gly Arg Glu His Cys Ser Pro
65 70 75 80

His His Thr Ala Ile Arg Gln Ala Leu Val Cys Trp Glu Glu Leu Thr
85 90 95

Arg Leu Ile Thr Trp Met Ser Glu Asn Thr Thr Glu Glu Val Arg Arg
100 105 110

Ile Ile Val Asp His Val Asn Asn Thr Trp Gly Leu Lys Val Arg Gln
115 120 125

Thr Leu Trp Phe His Leu Ser Cys Leu Thr Phe Gly Gln His Thr Val

130		135		140
Gln Glu Phe Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Ala Pro				
145		150		155 160
Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu His Thr				
	165		170	175
Val Ile Arg Arg Arg Gly Gly Ser Arg Ala Ala Arg Ser Pro Arg Arg				
	180		185	190
Arg Thr Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg				
	195		200	205
Arg Ser Gln Ser Pro Ala Ser Asn Cys				
210		215		

<210> 137

<211> 262

<212> PRT

<213> Snow Goose Hepatitis B Virus

<400> 137

Met Asp Val Asn Ala Ser Arg Ala Leu Ala Asn Val Tyr Asp Leu Pro				
1		5		10 15
Asp Asp Phe Phe Pro Lys Ile Glu Asp Leu Val Arg Asp Ala Lys Asp				
	20		25	30
Ala Leu Glu Pro Tyr Trp Lys Ser Asp Ser Ile Lys Lys His Val Leu				
	35		40	45
Ile Ala Thr His Phe Val Asp Leu Ile Glu Asp Phe Trp Gln Thr Thr				
	50		55	60
Gln Gly Met His Glu Ile Ala Glu Ala Ile Arg Ala Val Ile Pro Pro				
	65		70	75 80
Thr Thr Ala Pro Val Pro Ser Gly Tyr Leu Ile Gln His Asp Glu Ala				
		85		90 95
Glu Glu Ile Pro Leu Gly Asp Leu Phe Lys Glu Gln Glu Glu Arg Ile				
	100		105	110
Val Ser Phe Gln Pro Asp Tyr Pro Ile Thr Ala Arg Ile His Ala His				
	115		120	125
Leu Lys Ala Tyr Ala Lys Ile Asn Glu Glu Ser Leu Asp Arg Ala Arg				
	130		135	140
Arg Leu Leu Trp Trp His Tyr Asn Cys Leu Leu Trp Gly Glu Ala Thr				
	145		150	155 160
Val Thr Asn Tyr Ile Ser Arg Leu Arg Thr Trp Leu Ser Thr Pro Glu				
		165		170 175
Lys Tyr Arg Gly Arg Asp Ala Pro Thr Ile Glu Ala Ile Thr Arg Pro				
	180		185	190
Ile Gln Val Ala Gln Gly Gly Arg Lys Thr Ser Thr Ala Thr Arg Lys				
	195		200	205

Pro Arg Gly Leu Glu Pro Arg Arg Arg Lys Val Lys Thr Thr Val Val
 210 215 220
 Tyr Gly Arg Arg Arg Ser Lys Ser Arg Glu Arg Arg Ala Ser Ser Pro
 225 230 235 240
 Gln Arg Ala Gly Ser Pro Leu Pro Arg Ser Ser Ser Ser His His Arg
 245 250 255
 Ser Pro Ser Pro Arg Lys
 260

<210> 138
 <211> 305
 <212> PRT
 <213> Duck hepatitis B virus

<400> 138
 Met Trp Asp Leu Arg Leu His Pro Ser Pro Phe Gly Ala Ala Cys Gln
 1 5 10 15
 Gly Ile Phe Thr Ser Ser Leu Leu Leu Phe Leu Val Thr Val Pro Leu
 20 25 30
 Val Cys Thr Ile Val Tyr Asp Ser Cys Leu Cys Met Asp Ile Asn Ala
 35 40 45
 Ser Arg Ala Leu Ala Asn Val Tyr Asp Leu Pro Asp Asp Phe Phe Pro
 50 55 60
 Lys Ile Asp Asp Leu Val Arg Asp Ala Lys Asp Ala Leu Glu Pro Tyr
 65 70 75 80
 Trp Arg Asn Asp Ser Ile Lys Lys His Val Leu Ile Ala Thr His Phe
 85 90 95
 Val Asp Leu Ile Glu Asp Phe Trp Gln Thr Thr Gln Gly Met His Glu
 100 105 110
 Ile Ala Glu Ala Leu Arg Ala Ile Ile Pro Ala Thr Thr Ala Pro Val
 115 120 125
 Pro Gln Gly Phe Leu Val Gln His Glu Glu Ala Glu Glu Ile Pro Leu
 130 135 140
 Gly Glu Leu Phe Arg Tyr Gln Glu Glu Arg Leu Thr Asn Phe Gln Pro
 145 150 155 160
 Asp Tyr Pro Val Thr Ala Arg Ile His Ala His Leu Lys Ala Tyr Ala
 165 170 175
 Lys Ile Asn Glu Glu Ser Leu Asp Arg Ala Arg Arg Leu Leu Trp Trp
 180 185 190
 His Tyr Asn Cys Leu Leu Trp Gly Glu Pro Asn Val Thr Asn Tyr Ile
 195 200 205
 Ser Arg Leu Arg Thr Trp Leu Ser Thr Pro Glu Lys Tyr Arg Gly Lys
 210 215 220
 Asp Ala Pro Thr Ile Glu Ala Ile Thr Arg Pro Ile Gln Val Ala Gln

225		230		235		240
Gly Gly Arg Asn Lys Thr Gln Gly Val Arg Lys Ser Arg Gly Leu Glu						
		245		250		255
Pro Arg Arg Arg Arg Val Lys Thr Thr Ile Val Tyr Gly Arg Arg Arg						
		260		265		270
Ser Lys Ser Arg Glu Arg Arg Ala Pro Thr Pro Gln Arg Ala Gly Ser						
		275		280		285
Pro Leu Pro Arg Thr Ser Arg Asp His His Arg Ser Pro Ser Pro Arg						
		290		295		300
Glu						
305						
<210> 139						
<211> 212						
<212> PRT						
<213> Haemophilus influenzae						
<400> 139						
Met Lys Lys Thr Leu Leu Gly Ser Leu Ile Leu Leu Ala Phe Ala Gly						
1		5		10		15
Asn Val Gln Ala Ala Ala Asn Ala Asp Thr Ser Gly Thr Val Thr Phe						
		20		25		30
Phe Gly Lys Val Val Glu Asn Thr Cys Gln Val Asn Gln Asp Ser Glu						
		35		40		45
Tyr Glu Cys Asn Leu Asn Asp Val Gly Lys Asn His Leu Ser Gln Gln						
		50		55		60
Gly Tyr Thr Ala Met Gln Thr Pro Phe Thr Ile Thr Leu Glu Asn Cys						
		65		70		75
Asn Val Thr Thr Thr Asn Asn Lys Pro Lys Ala Thr Lys Val Gly Val						
		85		90		95
Tyr Phe Tyr Ser Trp Glu Ile Ala Asp Lys Asp Asn Lys Tyr Thr Leu						
		100		105		110
Lys Asn Ile Lys Glu Asn Thr Gly Thr Asn Asp Ser Ala Asn Lys Val						
		115		120		125
Asn Ile Gln Leu Leu Glu Asp Asn Gly Thr Ala Glu Ile Lys Val Val						
		130		135		140
Gly Lys Thr Thr Thr Asp Phe Thr Ser Glu Asn His Asn Gly Ala Gly						
		145		150		155
Ala Asp Pro Val Ala Thr Asn Lys His Ile Ser Ser Leu Thr Pro Leu						
		165		170		175
Asn Asn Gln Asn Ser Ile Asn Leu His Tyr Ile Ala Gln Tyr Tyr Ala						
		180		185		190
Thr Gly Val Ala Glu Ala Gly Lys Val Pro Ser Ser Val Asn Ser Gln						
		195		200		205

Ile Ala Tyr Glu
210

<210> 140
<211> 139
<212> PRT
<213> *Pseudomonas stutzeri*

<400> 140
Met Lys Ala Gln Met Gln Lys Gly Phe Thr Leu Ile Glu Leu Met Ile
1 5 10 15
Val Val Ala Ile Ile Gly Ile Leu Ala Ala Ile Ala Leu Pro Ala Tyr
20 25 30
Gln Asp Tyr Thr Val Arg Ser Asn Ala Ala Ala Ala Leu Ala Glu Ile
35 40 45
Thr Pro Gly Lys Ile Gly Phe Glu Gln Ala Ile Asn Glu Gly Lys Thr
50 55 60
Pro Ser Leu Thr Ser Thr Asp Glu Gly Tyr Ile Gly Ile Thr Asp Ser
65 70 75 80
Thr Ser Tyr Cys Asp Val Asp Leu Asp Thr Ala Ala Asp Gly His Ile
85 90 95
Glu Cys Thr Ala Lys Gly Gly Asn Ala Gly Lys Phe Asp Gly Lys Thr
100 105 110
Ile Thr Leu Asn Arg Thr Ala Asp Gly Glu Trp Ser Cys Ala Ser Thr
115 120 125
Leu Asp Ala Lys Tyr Lys Pro Gly Lys Cys Ser
130 135

<210> 141
<211> 59
<212> PRT
<213> *Caulobacter crescentus*

<400> 141
Met Thr Lys Phe Val Thr Arg Phe Leu Lys Asp Glu Ser Gly Ala Thr
1 5 10 15
Ala Ile Glu Tyr Gly Leu Ile Val Ala Leu Ile Ala Val Val Ile Val
20 25 30
Thr Ala Val Thr Thr Leu Gly Thr Asn Leu Arg Thr Ala Phe Thr Lys
35 40 45
Ala Gly Ala Ala Val Ser Thr Ala Ala Gly Thr
50 55

<210> 142
<211> 173
<212> PRT
<213> *Escherichia coli*

<400> 142

```

Met Ala Val Val Ser Phe Gly Val Asn Ala Ala Pro Thr Ile Pro Gln
 1          5          10          15

Gly Gln Gly Lys Val Thr Phe Asn Gly Thr Val Val Asp Ala Pro Cys
          20          25          30

Ser Ile Ser Gln Lys Ser Ala Asp Gln Ser Ile Asp Phe Gly Gln Leu
          35          40          45

Ser Lys Ser Phe Leu Glu Ala Gly Gly Val Ser Lys Pro Met Asp Leu
          50          55          60

Asp Ile Glu Leu Val Asn Cys Asp Ile Thr Ala Phe Lys Gly Gly Asn
 65          70          75          80

Gly Ala Gln Lys Gly Thr Val Lys Leu Ala Phe Thr Gly Pro Ile Val
          85          90          95

Asn Gly His Ser Asp Glu Leu Asp Thr Asn Gly Gly Thr Gly Thr Ala
          100          105          110

Ile Val Val Gln Gly Ala Gly Lys Asn Val Val Phe Asp Gly Ser Glu
          115          120          125

Gly Asp Ala Asn Thr Leu Lys Asp Gly Glu Asn Val Leu His Tyr Thr
          130          135          140

Ala Val Val Lys Lys Ser Ser Ala Val Gly Ala Ala Val Thr Glu Gly
          145          150          155          160

Ala Phe Ser Ala Val Ala Asn Phe Asn Leu Thr Tyr Gln
          165          170

```

<210> 143

<211> 173

<212> PRT

<213> Escherichia coli

<400> 143

```

Met Ala Val Val Ser Phe Gly Val Asn Ala Ala Pro Thr Ile Pro Gln
 1          5          10          15

Gly Gln Gly Lys Val Thr Phe Asn Gly Thr Val Val Asp Ala Pro Cys
          20          25          30

Ser Ile Ser Gln Lys Ser Ala Asp Gln Ser Ile Asp Phe Gly Gln Leu
          35          40          45

Ser Lys Ser Phe Leu Glu Ala Gly Gly Val Ser Lys Pro Met Asp Leu
          50          55          60

Asp Ile Glu Leu Val Asn Cys Asp Ile Thr Ala Phe Lys Gly Gly Asn
 65          70          75          80

Gly Ala Gln Lys Gly Thr Val Lys Leu Ala Phe Thr Gly Pro Ile Val
          85          90          95

Asn Gly His Ser Asp Glu Leu Asp Thr Asn Gly Gly Thr Gly Thr Ala
          100          105          110

```


Ile Val Val Gln Gly Ala Gly Lys Asn Val Val Phe Asp Gly Ser Glu
115 120 125
Gly Asp Ala Asn Thr Leu Lys Asp Gly Glu Asn Val Leu His Tyr Thr
130 135 140
Ala Val Val Lys Lys Ser Ser Ala Val Gly Ala Ala Val Thr Glu Gly
145 150 155 160
Ala Phe Ser Ala Val Ala Asn Phe Asn Leu Thr Tyr Gln
165 170

<210> 144
<211> 172
<212> PRT
<213> Escherichia coli

<400> 144
Met Ala Val Val Ser Phe Gly Val Asn Ala Ala Pro Thr Thr Pro Gln
1 5 10 15
Gly Gln Gly Arg Val Thr Phe Asn Gly Thr Val Val Asp Ala Pro Cys
20 25 30
Ser Ile Ser Gln Lys Ser Ala Asp Gln Ser Ile Asp Phe Gly Gln Leu
35 40 45
Ser Lys Ser Phe Leu Ala Asn Asp Gly Gln Ser Lys Pro Met Asn Leu
50 55 60
Asp Ile Glu Leu Val Asn Cys Asp Ile Thr Ala Phe Lys Asn Gly Asn
65 70 75 80
Ala Lys Thr Gly Ser Val Lys Leu Ala Phe Thr Gly Pro Thr Val Ser
85 90 95
Gly His Pro Ser Glu Leu Ala Thr Asn Gly Gly Pro Gly Thr Ala Ile
100 105 110
Met Ile Gln Ala Ala Gly Lys Asn Val Pro Phe Asp Gly Thr Glu Gly
115 120 125
Asp Pro Asn Leu Leu Lys Asp Gly Asp Asn Val Leu His Tyr Thr Thr
130 135 140
Val Gly Lys Lys Ser Ser Asp Gly Asn Ala Gln Ile Thr Glu Gly Ala
145 150 155 160
Phe Ser Gly Val Ala Thr Phe Asn Leu Ser Tyr Gln
165 170

<210> 145
<211> 853
<212> DNA
<213> Escherichia coli

<220>
<221> CDS
<222> (281)..(829)

<400> 145
acgtttctgt ggctcgacgc atcttcctca ttcttctctc caaaaaccac ctcatgcaat 60

```

ataaacatct ataaataaag ataacaaata gaatattaag ccaacaaata aactgaaaaa 120
gtttgtccgc gatgctttac ctctatgagt caaaatggcc ccaatgtttc atcttttggg 180
ggaaactgtg cagtgttggc agtcaaactc gttgacaaac aaagtgtaca gaacgactgc 240
ccatgtcgat ttagaaatag ttttttgaaa ggaaagcagc atg aaa att aaa act 295
               Met Lys Ile Lys Thr
               1           5

ctg gca atc gtt gtt ctg tgc gct ctg tcc ctc agt tct acg acg gct 343
Leu Ala Ile Val Val Leu Ser Ala Leu Ser Leu Ser Ser Thr Thr Ala
               10           15           20

ctg gcc gct gcc acg acg gtt aat ggt ggg acc gtt cac ttt aaa ggg 391
Leu Ala Ala Ala Thr Thr Val Asn Gly Gly Thr Val His Phe Lys Gly
               25           30           35

gaa gtt gtt aac gcc gct tgc gca gtt gat gca ggc tct gtt gat caa 439
Glu Val Val Asn Ala Ala Cys Ala Val Asp Ala Gly Ser Val Asp Gln
               40           45           50

acc gtt cag tta gga cag gtt cgt acc gca tgc ctg gca cag gaa gga 487
Thr Val Gln Leu Gly Gln Val Arg Thr Ala Ser Leu Ala Gln Glu Gly
               55           60           65

gca acc agt tct gct gtc ggt ttt aac att cag ctg aat gat tgc gat 535
Ala Thr Ser Ser Ala Val Gly Phe Asn Ile Gln Leu Asn Asp Cys Asp
               70           75           80           85

acc aat gtt gca tct aaa gcc gct gtt gcc ttt tta ggt acg gcg att 583
Thr Asn Val Ala Ser Lys Ala Ala Val Ala Phe Leu Gly Thr Ala Ile
               90           95           100

gat gcg ggt cat acc aac gtt ctg gct ctg cag agt tca gct gcg ggt 631
Asp Ala Gly His Thr Asn Val Leu Ala Leu Gln Ser Ser Ala Ala Gly
               105           110           115

agc gca aca aac gtt ggt gtg cag atc ctg gac aga acg ggt gct gcg 679
Ser Ala Thr Asn Val Gly Val Gln Ile Leu Asp Arg Thr Gly Ala Ala
               120           125           130

ctg acg ctg gat ggt gcg aca ttt agt tca gaa aca acc ctg aat aac 727
Leu Thr Leu Asp Gly Ala Thr Phe Ser Ser Glu Thr Thr Leu Asn Asn
               135           140           145

gga acc aat acc att ccg ttc cag gcg cgt tat ttt gca acc ggg gcc 775
Gly Thr Asn Thr Ile Pro Phe Gln Ala Arg Tyr Phe Ala Thr Gly Ala
               150           155           160           165

gca acc ccg ggt gct gct aat gcg gat gcg acc ttc aag gtt cag tat 823
Ala Thr Pro Gly Ala Ala Asn Ala Asp Ala Thr Phe Lys Val Gln Tyr
               170           175           180

caa taa cctacctagg ttcagggacg ttca 853
Gln

```

<210> 146

<211> 182

<212> PRT

<213> Escherichia coli

```

<400> 146
Met Lys Ile Lys Thr Leu Ala Ile Val Val Leu Ser Ala Leu Ser Leu
 1          5          10          15
Ser Ser Thr Thr Ala Leu Ala Ala Ala Thr Thr Val Asn Gly Gly Thr
          20          25          30
Val His Phe Lys Gly Glu Val Val Asn Ala Ala Cys Ala Val Asp Ala
          35          40          45
Gly Ser Val Asp Gln Thr Val Gln Leu Gly Gln Val Arg Thr Ala Ser
          50          55          60
Leu Ala Gln Glu Gly Ala Thr Ser Ser Ala Val Gly Phe Asn Ile Gln
          65          70          75          80
Leu Asn Asp Cys Asp Thr Asn Val Ala Ser Lys Ala Ala Val Ala Phe
          85          90          95
Leu Gly Thr Ala Ile Asp Ala Gly His Thr Asn Val Leu Ala Leu Gln
          100          105          110
Ser Ser Ala Ala Gly Ser Ala Thr Asn Val Gly Val Gln Ile Leu Asp
          115          120          125
Arg Thr Gly Ala Ala Leu Thr Leu Asp Gly Ala Thr Phe Ser Ser Glu
          130          135          140
Thr Thr Leu Asn Asn Gly Thr Asn Thr Ile Pro Phe Gln Ala Arg Tyr
          145          150          155          160
Phe Ala Thr Gly Ala Ala Thr Pro Gly Ala Ala Asn Ala Asp Ala Thr
          165          170          175
Phe Lys Val Gln Tyr Gln
          180

```

```

<210> 147
<211> 11
<212> PRT
<213> Artificial Sequence

```

```

<220>
<223> FLAG peptide

```

```

<400> 147
Cys Gly Gly Asp Tyr Lys Asp Asp Asp Asp Lys
 1          5          10

```

```

<210> 148
<211> 31
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> primer

```

```

<400> 148
ccggaattca tggacattga cccttataaa g

```

31

```

<210> 149
<211> 37
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> primer

```

```

<400> 149

```

gtgcagtatg gtgaggtgag gaatgctcag gagactc 37

<210> 150
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 150
gsgtctcctg agcattcctc acctcaccat actgcac 37

<210> 151
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 151
cttccaaaag tgagggaaga aatgtgaaac cac 33

<210> 152
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 152
cgcgtcccaa gcttctaaac aacagtagtc tccggaagcg ttgatag 47

<210> 153
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 153
gtggtttcac atttcttccc tcacttttgg aag 33

<210> 154
<211> 281
<212> PRT
<213> *Saccharomyces cerevisiae*

<400> 154
Met Ser Glu Tyr Gln Pro Ser Leu Phe Ala Leu Asn Pro Met Gly Phe
1 5 10 15

Ser	Pro	Leu	Asp	Gly	Ser	Lys	Ser	Thr	Asn	Glu	Asn	Val	Ser	Ala	Ser		
			20					25					30				
Thr	Ser	Thr	Ala	Lys	Pro	Met	Val	Gly	Gln	Leu	Ile	Phe	Asp	Lys	Phe		
		35					40					45					
Ile	Lys	Thr	Glu	Glu	Asp	Pro	Ile	Ile	Lys	Gln	Asp	Thr	Pro	Ser	Asn		
	50					55					60						
Leu	Asp	Phe	Asp	Phe	Ala	Leu	Pro	Gln	Thr	Ala	Thr	Ala	Pro	Asp	Ala		
65					70					75					80		
Lys	Thr	Val	Leu	Pro	Ile	Pro	Glu	Leu	Asp	Asp	Ala	Val	Val	Glu	Ser		
				85					90					95			
Phe	Phe	Ser	Ser	Ser	Thr	Asp	Ser	Thr	Pro	Met	Phe	Glu	Tyr	Glu	Asn		
			100					105					110				
Leu	Glu	Asp	Asn	Ser	Lys	Glu	Trp	Thr	Ser	Leu	Phe	Asp	Asn	Asp	Ile		
		115					120					125					
Pro	Val	Thr	Thr	Asp	Asp	Val	Ser	Leu	Ala	Asp	Lys	Ala	Ile	Glu	Ser		
	130					135					140						
Thr	Glu	Glu	Val	Ser	Leu	Val	Pro	Ser	Asn	Leu	Glu	Val	Ser	Thr	Thr		
145					150					155					160		
Ser	Phe	Leu	Pro	Thr	Pro	Val	Leu	Glu	Asp	Ala	Lys	Leu	Thr	Gln	Thr		
				165					170					175			
Arg	Lys	Val	Lys	Lys	Pro	Asn	Ser	Val	Val	Lys	Lys	Ser	His	His	Val		
			180					185					190				
Gly	Lys	Asp	Asp	Glu	Ser	Arg	Leu	Asp	His	Leu	Gly	Val	Val	Ala	Tyr		
		195					200					205					
Asn	Arg	Lys	Gln	Arg	Ser	Ile	Pro	Leu	Ser	Pro	Ile	Val	Pro	Glu	Ser		
	210					215					220						
Ser	Asp	Pro	Ala	Ala	Leu	Lys	Arg	Ala	Arg	Asn	Thr	Glu	Ala	Ala	Arg		
225					230					235					240		
Arg	Ser	Arg	Ala	Arg	Lys	Leu	Gln	Arg	Met	Lys	Gln	Leu	Glu	Asp	Lys		
				245					250					255			
Val	Glu	Glu	Leu	Leu	Ser	Lys	Asn	Tyr	His	Leu	Glu	Asn	Glu	Val	Ala		
			260					265					270				
Arg	Leu	Lys	Lys	Leu	Val	Gly	Glu	Arg									
		275					280										

<210> 155
 <211> 181
 <212> PRT
 <213> Escherichia coli

<400> 155
 Met Lys Ile Lys Thr Leu Ala Ile Val Val Leu Ser Ala Leu Ser Leu
 1 5 10 15

Ser	Ser	Thr	Ala	Ala	Leu	Ala	Ala	Ala	Thr	Thr	Val	Asn	Gly	Gly	Thr		
			20					25					30				

Val His Phe Lys Gly Glu Val Val Asn Ala Ala Cys Ala Val Asp Ala
35 40 45

Gly Ser Val Asp Gln Thr Val Gln Leu Gly Gln Val Arg Thr Ala Ser
50 55 60

Leu Ala Gln Glu Gly Ala Thr Ser Ser Ala Val Gly Phe Asn Ile Gln
65 70 75 80

Leu Asn Asp Cys Asp Thr Asn Val Ala Ser Lys Ala Ala Val Ala Phe
85 90 95

Leu Gly Thr Ala Ile Asp Ala Gly His Thr Asn Val Leu Ala Leu Gln
100 105 110

Ser Ser Ala Ala Gly Ser Ala Thr Asn Val Gly Val Gln Ile Leu Asp
115 120 125

Arg Thr Gly Ala Ala Leu Thr Leu Asp Gly Ala Thr Phe Ser Ser Glu
130 135 140

Thr Thr Leu Asn Asn Gly Thr Asn Thr Ile Pro Phe Gln Ala Arg Tyr
145 150 155 160

Phe Ala Gly Ala Ala Thr Pro Gly Ala Ala Asn Ala Asp Ala Thr Phe
165 170 175

Lys Val Gln Tyr Gln
180

<210> 156
<211> 447
<212> DNA
<213> Hepatitis B

<220>
<221> CDS
<222> (1)..(447)

<400> 156
atg gac att gac cct tat aaa gaa ttt gga gct act gtg gag tta ctc 48
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
1 5 10 15

tcg ttt ttg cct tct gac ttc ttt cct tcc gta cga gat ctt cta gat 96
Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
20 25 30

acc gcc gca gct ctg tat cgg gat gcc tta gag tct cct gag cat tgt 144
Thr Ala Ala Ala Leu Tyr Arg Asp Ala Leu Glu Ser Pro Glu His Cys
35 40 45

tca cct cac cat act gca ctc agg caa gca att ctt tgc tgg gga gac 192
Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp
50 55 60

tta atg act cta gct acc tgg gtg ggt act aat tta gaa gat cca gca 240
Leu Met Thr Leu Ala Thr Trp Val Gly Thr Asn Leu Glu Asp Pro Ala
65 70 75 80

tct agg gac cta gta gtc agt tat gtc aac act aat gtg ggc cta aag 288

Ser	Arg	Asp	Leu	Val	Val	Ser	Tyr	Val	Asn	Thr	Asn	Val	Gly	Leu	Lys	
				85					90					95		
ttc	aga	caa	tta	ttg	tg	ttt	cac	att	tct	tgt	ctc	act	ttt	gga	aga	336
Phe	Arg	Gln	Leu	Leu	Trp	Phe	His	Ile	Ser	Cys	Leu	Thr	Phe	Gly	Arg	
			100					105					110			
gaa	acg	gtt	cta	gag	tat	ttg	gtc	tct	ttt	gga	gtg	tg	att	cgc	act	384
Glu	Thr	Val	Leu	Glu	Tyr	Leu	Val	Ser	Phe	Gly	Val	Trp	Ile	Arg	Thr	
		115					120					125				
cct	cca	gcc	tat	aga	cca	cca	aat	gcc	cct	atc	cta	tca	acg	ctt	ccg	432
Pro	Pro	Ala	Tyr	Arg	Pro	Pro	Asn	Ala	Pro	Ile	Leu	Ser	Thr	Leu	Pro	
	130					135					140					
gag	act	act	gtt	gtt												447
Glu	Thr	Thr	Val	Val												
145																

<210> 157
 <211> 149
 <212> PRT
 <213> Hepatitis B

<400> 157																
Met	Asp	Ile	Asp	Pro	Tyr	Lys	Glu	Phe	Gly	Ala	Thr	Val	Glu	Leu	Leu	
1				5					10					15		
Ser	Phe	Leu	Pro	Ser	Asp	Phe	Phe	Pro	Ser	Val	Arg	Asp	Leu	Leu	Asp	
			20					25					30			
Thr	Ala	Ala	Ala	Leu	Tyr	Arg	Asp	Ala	Leu	Glu	Ser	Pro	Glu	His	Cys	
		35					40					45				
Ser	Pro	His	His	Thr	Ala	Leu	Arg	Gln	Ala	Ile	Leu	Cys	Trp	Gly	Asp	
	50					55					60					
Leu	Met	Thr	Leu	Ala	Thr	Trp	Val	Gly	Thr	Asn	Leu	Glu	Asp	Pro	Ala	
65					70					75					80	
Ser	Arg	Asp	Leu	Val	Val	Ser	Tyr	Val	Asn	Thr	Asn	Val	Gly	Leu	Lys	
				85					90					95		
Phe	Arg	Gln	Leu	Leu	Trp	Phe	His	Ile	Ser	Cys	Leu	Thr	Phe	Gly	Arg	
		100						105					110			
Glu	Thr	Val	Leu	Glu	Tyr	Leu	Val	Ser	Phe	Gly	Val	Trp	Ile	Arg	Thr	
		115					120					125				
Pro	Pro	Ala	Tyr	Arg	Pro	Pro	Asn	Ala	Pro	Ile	Leu	Ser	Thr	Leu	Pro	
	130					135					140					
Glu	Thr	Thr	Val	Val												
145																

<210> 158
 <211> 152
 <212> PRT
 <213> Hepatitis B

<400> 158

```

Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
 1          5          10          15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
          20          25          30

Thr Ala Ala Ala Leu Tyr Arg Asp Ala Leu Glu Ser Pro Glu His Cys
          35          40          45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp
 50          55          60

Leu Met Thr Leu Ala Thr Trp Val Gly Thr Asn Leu Glu Asp Gly Gly
 65          70          75          80

Lys Gly Gly Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Val
          85          90          95

Gly Leu Lys Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr
          100          105          110

Phe Gly Arg Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp
          115          120          125

Ile Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser
 130          135          140

Thr Leu Pro Glu Thr Thr Val Val
145          150

```

<210> 159

<211> 132

<212> PRT

<213> Bacteriophage Q Beta

<400> 159

```

Ala Lys Leu Glu Thr Val Thr Leu Gly Asn Ile Gly Lys Asp Gly Lys
 1          5          10          15

Gln Thr Leu Val Leu Asn Pro Arg Gly Val Asn Pro Thr Asn Gly Val
          20          25          30

Ala Ser Leu Ser Gln Ala Gly Ala Val Pro Ala Leu Glu Lys Arg Val
          35          40          45

Thr Val Ser Val Ser Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys Val
          50          55          60

Gln Val Lys Ile Gln Asn Pro Thr Ala Cys Thr Ala Asn Gly Ser Cys
 65          70          75          80

Asp Pro Ser Val Thr Arg Gln Ala Tyr Ala Asp Val Thr Phe Ser Phe
          85          90          95

Thr Gln Tyr Ser Thr Asp Glu Glu Arg Ala Phe Val Arg Thr Glu Leu
          100          105          110

Ala Ala Leu Leu Ala Ser Pro Leu Leu Ile Asp Ala Ile Asp Gln Leu
          115          120          125

Asn Pro Ala Tyr

```


130

<210> 160
 <211> 129
 <212> PRT
 <213> Bacteriophage R 17

<400> 160

Ala	Ser	Asn	Phe	Thr	Gln	Phe	Val	Leu	Val	Asn	Asp	Gly	Gly	Thr	Gly
1				5					10					15	
Asn	Val	Thr	Val	Ala	Pro	Ser	Asn	Phe	Ala	Asn	Gly	Val	Ala	Glu	Trp
			20					25					30		
Ile	Ser	Ser	Asn	Ser	Arg	Ser	Gln	Ala	Tyr	Lys	Val	Thr	Cys	Ser	Val
		35					40					45			
Arg	Gln	Ser	Ser	Ala	Gln	Asn	Arg	Lys	Tyr	Thr	Ile	Lys	Val	Glu	Val
	50					55					60				
Pro	Lys	Val	Ala	Thr	Gln	Thr	Val	Gly	Gly	Val	Glu	Leu	Pro	Val	Ala
65					70					75					80
Ala	Trp	Arg	Ser	Tyr	Leu	Asn	Met	Glu	Leu	Thr	Ile	Pro	Ile	Phe	Ala
				85					90					95	
Thr	Asn	Ser	Asp	Cys	Glu	Leu	Ile	Val	Lys	Ala	Met	Gln	Gly	Leu	Leu
			100					105					110		
Lys	Asp	Gly	Asn	Pro	Ile	Pro	Ser	Ala	Ile	Ala	Ala	Asn	Ser	Gly	Ile
		115					120					125			

Tyr

<210> 161
 <211> 130
 <212> PRT
 <213> Bacteriophage fr

<400> 161

Met	Ala	Ser	Asn	Phe	Glu	Glu	Phe	Val	Leu	Val	Asp	Asn	Gly	Gly	Thr
1				5					10					15	
Gly	Asp	Val	Lys	Val	Ala	Pro	Ser	Asn	Phe	Ala	Asn	Gly	Val	Ala	Glu
			20					25					30		
Trp	Ile	Ser	Ser	Asn	Ser	Arg	Ser	Gln	Ala	Tyr	Lys	Val	Thr	Cys	Ser
		35					40					45			
Val	Arg	Gln	Ser	Ser	Ala	Asn	Asn	Arg	Lys	Tyr	Thr	Val	Lys	Val	Glu
	50					55					60				
Val	Pro	Lys	Val	Ala	Thr	Gln	Val	Gln	Gly	Gly	Val	Glu	Leu	Pro	Val
65					70					75					80
Ala	Ala	Trp	Arg	Ser	Tyr	Met	Asn	Met	Glu	Leu	Thr	Ile	Pro	Val	Phe

	85		90		95
Ala Thr Asn Asp Asp Cys Ala Leu Ile Val Lys Ala Leu Gln Gly Thr	100		105		110
Phe Lys Thr Gly Asn Pro Ile Ala Thr Ala Ile Ala Ala Asn Ser Gly	115		120		125
Ile Tyr	130				

<210> 162
 <211> 130
 <212> PRT
 <213> Bacteriophage GA

<400> 162

Met Ala Thr Leu Arg Ser Phe Val Leu Val Asp Asn Gly Gly Thr Gly	1	5	10	15
Asn Val Thr Val Val Pro Val Ser Asn Ala Asn Gly Val Ala Glu Trp	20	25	30	
Leu Ser Asn Asn Ser Arg Ser Gln Ala Tyr Arg Val Thr Ala Ser Tyr	35	40	45	
Arg Ala Ser Gly Ala Asp Lys Arg Lys Tyr Ala Ile Lys Leu Glu Val	50	55	60	
Pro Lys Ile Val Thr Gln Val Val Asn Gly Val Glu Leu Pro Gly Ser	65	70	75	80
Ala Trp Lys Ala Tyr Ala Ser Ile Asp Leu Thr Ile Pro Ile Phe Ala	85	90	95	
Ala Thr Asp Asp Val Thr Val Ile Ser Lys Ser Leu Ala Gly Leu Phe	100	105	110	
Lys Val Gly Asn Pro Ile Ala Glu Ala Ile Ser Ser Gln Ser Gly Phe	115	120	125	
Tyr Ala	130			

<210> 163
 <211> 132
 <212> PRT
 <213> Bacteriophage SP

<400> 163

Met Ala Lys Leu Asn Gln Val Thr Leu Ser Lys Ile Gly Lys Asn Gly	1	5	10	15
Asp Gln Thr Leu Thr Leu Thr Pro Arg Gly Val Asn Pro Thr Asn Gly	20	25	30	
Val Ala Ser Leu Ser Glu Ala Gly Ala Val Pro Ala Leu Glu Lys Arg	35	40	45	

Val Thr Val Ser Val Ala Gln Pro Ser Arg Asn Arg Lys Asn Phe Lys
50 55 60

Val Gln Ile Lys Leu Gln Asn Pro Thr Ala Cys Thr Arg Asp Ala Cys
65 70 75 80

Asp Pro Ser Val Thr Arg Ser Ala Phe Ala Asp Val Thr Leu Ser Phe
85 90 95

Thr Ser Tyr Ser Thr Asp Glu Glu Arg Ala Leu Ile Arg Thr Glu Leu
100 105 110

Ala Ala Leu Leu Ala Asp Pro Leu Ile Val Asp Ala Ile Asp Asn Leu
115 120 125

Asn Pro Ala Tyr
130

<210> 164
<211> 130
<212> PRT
<213> Bacteriophage MS2

<400> 164

Met Ala Ser Asn Phe Thr Gln Phe Val Leu Val Asp Asn Gly Gly Thr
1 5 10 15

Gly Asp Val Thr Val Ala Pro Ser Asn Phe Ala Asn Gly Val Ala Glu
20 25 30

Trp Ile Ser Ser Asn Ser Arg Ser Gln Ala Tyr Lys Val Thr Cys Ser
35 40 45

Val Arg Gln Ser Ser Ala Gln Asn Arg Lys Tyr Thr Ile Lys Val Glu
50 55 60

Val Pro Lys Val Ala Thr Gln Thr Val Gly Gly Val Glu Leu Pro Val
65 70 75 80

Ala Ala Trp Arg Ser Tyr Leu Asn Met Glu Leu Thr Ile Pro Ile Phe
85 90 95

Ala Thr Asn Ser Asp Cys Glu Leu Ile Val Lys Ala Met Gln Gly Leu
100 105 110

Leu Lys Asp Gly Asn Pro Ile Pro Ser Ala Ile Ala Ala Asn Ser Gly
115 120 125

Ile Tyr
130

<210> 165
<211> 133
<212> PRT
<213> Bacteriophage M11

<400> 165

Met Ala Lys Leu Gln Ala Ile Thr Leu Ser Gly Ile Gly Lys Lys Gly

1	5	10	15
Asp Val Thr	Leu Asp Leu Asn Pro Arg Gly Val Asn Pro Thr Asn Gly		
	20	25	30
Val Ala Ala	Leu Ser Glu Ala Gly Ala Val Pro Ala Leu Glu Lys Arg		
	35	40	45
Val Thr Ile	Ser Val Ser Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys		
	50	55	60
Val Gln Val	Lys Ile Gln Asn Pro Thr Ser Cys Thr Ala Ser Gly Thr		
	65	70	75
Cys Asp Pro	Ser Val Thr Arg Ser Ala Tyr Ser Asp Val Thr Phe Ser		
	85	90	95
Phe Thr Gln	Tyr Ser Thr Val Glu Glu Arg Ala Leu Val Arg Thr Glu		
	100	105	110
Leu Gln Ala	Leu Leu Ala Asp Pro Met Leu Val Asn Ala Ile Asp Asn		
	115	120	125
Leu Asn Pro	Ala Tyr		
	130		

<210> 166
 <211> 133
 <212> PRT
 <213> Bacteriophage MX1

<400> 166
Met Ala Lys Leu Gln Ala Ile Thr Leu Ser Gly Ile Gly Lys Asn Gly
1 5 10 15
Asp Val Thr Leu Asn Leu Asn Pro Arg Gly Val Asn Pro Thr Asn Gly
20 25 30
Val Ala Ala Leu Ser Glu Ala Gly Ala Val Pro Ala Leu Glu Lys Arg
35 40 45
Val Thr Ile Ser Val Ser Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys
50 55 60
Val Gln Val Lys Ile Gln Asn Pro Thr Ser Cys Thr Ala Ser Gly Thr
65 70 75 80
Cys Asp Pro Ser Val Thr Arg Ser Ala Tyr Ala Asp Val Thr Phe Ser
85 90 95
Phe Thr Gln Tyr Ser Thr Asp Glu Glu Arg Ala Leu Val Arg Thr Glu
100 105 110
Leu Lys Ala Leu Leu Ala Asp Pro Met Leu Ile Asp Ala Ile Asp Asn
115 120 125
Leu Asn Pro Ala Tyr
130

<210> 167
 <211> 330
 <212> PRT
 <213> Bacteriophage NL95

<400> 167

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Met Ala Lys Leu Asn Lys Val Thr Leu Thr Gly Ile Gly Lys Ala Gly
1      5      10      15

Asn Gln Thr Leu Thr Leu Thr Pro Arg Gly Val Asn Pro Thr Asn Gly
20     25     30

Val Ala Ser Leu Ser Glu Ala Gly Ala Val Pro Ala Leu Glu Lys Arg
35     40     45

Val Thr Val Ser Val Ala Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys
50     55     60

Val Gln Ile Lys Leu Gln Asn Pro Thr Ala Cys Thr Lys Asp Ala Cys
65     70     75     80

Asp Pro Ser Val Thr Arg Ser Gly Ser Arg Asp Val Thr Leu Ser Phe
85     90     95

Thr Ser Tyr Ser Thr Glu Arg Glu Arg Ala Leu Ile Arg Thr Glu Leu
100    105    110

Ala Ala Leu Leu Lys Asp Asp Leu Ile Val Asp Ala Ile Asp Asn Leu
115    120    125

Asn Pro Ala Tyr Trp Ala Ala Leu Leu Ala Ala Ser Pro Gly Gly Gly
130    135    140

Asn Asn Pro Tyr Pro Gly Val Pro Asp Ser Pro Asn Val Lys Pro Pro
145    150    155    160

Gly Gly Thr Gly Thr Tyr Arg Cys Pro Phe Ala Cys Tyr Arg Arg Gly
165    170    175

Glu Leu Ile Thr Glu Ala Lys Asp Gly Ala Cys Ala Leu Tyr Ala Cys
180    185    190

Gly Ser Glu Ala Leu Val Glu Phe Glu Tyr Ala Leu Glu Asp Phe Leu
195    200    205

Gly Asn Glu Phe Trp Arg Asn Trp Asp Gly Arg Leu Ser Lys Tyr Asp
210    215    220

Ile Glu Thr His Arg Arg Cys Arg Gly Asn Gly Tyr Val Asp Leu Asp
225    230    235    240

Ala Ser Val Met Gln Ser Asp Glu Tyr Val Leu Ser Gly Ala Tyr Asp
245    250    255

Val Val Lys Met Gln Pro Pro Gly Thr Phe Asp Ser Pro Arg Tyr Tyr
260    265    270

Leu His Leu Met Asp Gly Ile Tyr Val Asp Leu Ala Glu Val Thr Ala
275    280    285

Tyr Arg Ser Tyr Gly Met Val Ile Gly Phe Trp Thr Asp Ser Lys Ser
290    295    300
  
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Pro Gln Leu Pro Thr Asp Phe Thr Arg Phe Asn Arg His Asn Cys Pro
305 310 315 320

Val Gln Thr Val Ile Val Ile Pro Ser Leu
325 330

<210> 168
<211> 134
<212> PRT
<213> Apis mellifera

<400> 168
Ile Ile Tyr Pro Gly Thr Leu Trp Cys Gly His Gly Asn Lys Ser Ser
1 5 10 15
Gly Pro Asn Glu Leu Gly Arg Phe Lys His Thr Asp Ala Cys Cys Arg
20 25 30
Thr His Asp Met Cys Pro Asp Val Met Ser Ala Gly Glu Ser Lys His
35 40 45
Gly Leu Thr Asn Thr Ala Ser His Thr Arg Leu Ser Cys Asp Cys Asp
50 55 60
Asp Lys Phe Tyr Asp Cys Leu Lys Asn Ser Ala Asp Thr Ile Ser Ser
65 70 75 80
Tyr Phe Val Gly Lys Met Tyr Phe Asn Leu Ile Asp Thr Lys Cys Tyr
85 90 95
Lys Leu Glu His Pro Val Thr Gly Cys Gly Glu Arg Thr Glu Gly Arg
100 105 110
Cys Leu His Tyr Thr Val Asp Lys Ser Lys Pro Lys Val Tyr Gln Trp
115 120 125
Phe Asp Leu Arg Lys Tyr
130

<210> 169
<211> 129
<212> PRT
<213> Apis mellifera

<400> 169
Ile Ile Tyr Pro Gly Thr Leu Trp Cys Gly His Gly Asn Lys Ser Ser
1 5 10 15
Gly Pro Asn Glu Leu Gly Arg Phe Lys His Thr Asp Ala Cys Cys Arg
20 25 30
Thr His Asp Met Cys Pro Asn Val Met Ser Ala Gly Glu Ser Lys His
35 40 45
Gly Leu Thr Asp Thr Ala Ser Arg Leu Ser Cys Asn Asp Asn Asp Leu
50 55 60
Phe Tyr Lys Asp Ser Ala Asp Thr Ile Ser Ser Tyr Phe Val Gly Lys
65 70 75 80

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Met Tyr Phe Asn Leu Ile Asn Thr Lys Cys Tyr Lys Leu Glu His Pro
85 90 95

Val Thr Gly Cys Gly Glu Arg Thr Glu Gly Arg Cys Leu His Tyr Thr
100 105 110

Val Asp Lys Ser Lys Pro Lys Val Tyr Gln Trp Phe Asp Leu Arg Lys
115 120 125

Tyr

<210> 170

<211> 134

<212> PRT

<213> Apis dorsata

<400> 170

Ile Ile Tyr Pro Gly Thr Leu Trp Cys Gly His Gly Asn Val Ser Ser
1 5 10 15

Ser Pro Asp Glu Leu Gly Arg Phe Lys His Thr Asp Ser Cys Cys Arg
20 25 30

Ser His Asp Met Cys Pro Asp Val Met Ser Ala Gly Glu Ser Lys His
35 40 45

Gly Leu Thr Asn Thr Ala Ser His Thr Arg Leu Ser Cys Asp Cys Asp
50 55 60

Asp Lys Phe Tyr Asp Cys Leu Lys Asn Ser Ser Asp Thr Ile Ser Ser
65 70 75 80

Tyr Phe Val Gly Glu Met Tyr Phe Asn Ile Leu Asp Thr Lys Cys Tyr
85 90 95

Lys Leu Glu His Pro Val Thr Gly Cys Gly Lys Arg Thr Glu Gly Arg
100 105 110

Cys Leu Asn Tyr Thr Val Asp Lys Ser Lys Pro Lys Val Tyr Gln Trp
115 120 125

Phe Asp Leu Arg Lys Tyr
130

<210> 171

<211> 134

<212> PRT

<213> Apis cerana

<400> 171

Ile Ile Tyr Pro Gly Thr Leu Trp Cys Gly His Gly Asn Val Ser Ser
1 5 10 15

Gly Pro Asn Glu Leu Gly Arg Phe Lys His Thr Asp Ala Cys Cys Arg
20 25 30

Thr His Asp Met Cys Pro Asp Val Met Ser Ala Gly Glu Ser Lys His
35 40 45

Gly Leu Thr Asn Thr Ala Ser His Thr Arg Leu Ser Cys Asp Cys Asp

50	55	60
Asp Thr Phe Tyr Asp Cys Leu Lys Asn Ser Gly Glu Lys Ile Ser Ser		
65	70	75 80
Tyr Phe Val Gly Lys Met Tyr Phe Asn Leu Ile Asp Thr Lys Cys Tyr		
	85	90 95
Lys Leu Glu His Pro Val Thr Gly Cys Gly Glu Arg Thr Glu Gly Arg		
	100	105 110
Cys Leu Arg Tyr Thr Val Asp Lys Ser Lys Pro Lys Val Tyr Gln Trp		
	115	120 125
Phe Asp Leu Arg Lys Tyr		
130		

<210> 172
 <211> 136
 <212> PRT
 <213> Bombus pennsylvanicus

<400> 172
Ile Ile Tyr Pro Gly Thr Leu Trp Cys Gly Asn Gly Asn Ile Ala Asn
1 5 10 15
Gly Thr Asn Glu Leu Gly Leu Trp Lys Glu Thr Asp Ala Cys Cys Arg
20 25 30
Thr His Asp Met Cys Pro Asp Ile Ile Glu Ala His Gly Ser Lys His
35 40 45
Gly Leu Thr Asn Pro Ala Asp Tyr Thr Arg Leu Asn Cys Glu Cys Asp
50 55 60
Glu Glu Phe Arg His Cys Leu His Asn Ser Gly Asp Ala Val Ser Ala
65 70 75 80
Ala Phe Val Gly Arg Thr Tyr Phe Thr Ile Leu Gly Thr Gln Cys Phe
85 90 95
Arg Leu Asp Tyr Pro Ile Val Lys Cys Lys Val Lys Ser Thr Ile Leu
100 105 110
Arg Glu Cys Lys Glu Tyr Glu Phe Asp Thr Asn Ala Pro Gln Lys Tyr
115 120 125
Gln Trp Phe Asp Val Leu Ser Tyr
130 135

<210> 173
 <211> 142
 <212> PRT
 <213> Heloderma suspectum

<400> 173
Gly Ala Phe Ile Met Pro Gly Thr Leu Trp Cys Gly Ala Gly Asn Ala
1 5 10 15

Ala Ser Asp Tyr Ser Gln Leu Gly Thr Glu Lys Asp Thr Asp Met Cys
20 25 30
Cys Arg Asp His Asp His Cys Ser Asp Thr Met Ala Ala Leu Glu Tyr
35 40 45
Lys His Gly Met Arg Asn Tyr Arg Pro His Thr Val Ser His Cys Asp
50 55 60
Cys Asp Asn Gln Phe Arg Ser Cys Leu Met Asn Val Lys Asp Arg Thr
65 70 75 80
Ala Asp Leu Val Gly Met Thr Tyr Phe Thr Val Leu Lys Ile Ser Cys
85 90 95
Phe Glu Leu Glu Glu Gly Glu Gly Cys Val Asp Asn Asn Phe Ser Gln
100 105 110
Gln Cys Thr Lys Ser Glu Ile Met Pro Val Ala Lys Leu Val Ser Ala
115 120 125
Ala Pro Tyr Gln Ala Gln Ala Glu Thr Gln Ser Gly Glu Gly
130 135 140

<210> 174
<211> 143
<212> PRT
<213> Heloderma suspectum

<400> 174
Gly Ala Phe Ile Met Pro Gly Thr Leu Trp Cys Gly Ala Gly Asn Ala
1 5 10 15
Ala Ser Asp Tyr Ser Gln Leu Gly Thr Glu Lys Asp Thr Asp Met Cys
20 25 30
Cys Arg Asp His Asp His Cys Glu Asn Trp Ile Ser Ala Leu Glu Tyr
35 40 45
Lys His Gly Met Arg Asn Tyr Tyr Pro Ser Thr Ile Ser His Cys Asp
50 55 60
Cys Asp Asn Gln Phe Arg Ser Cys Leu Met Lys Leu Lys Asp Gly Thr
65 70 75 80
Ala Asp Tyr Val Gly Gln Thr Tyr Phe Asn Val Leu Lys Ile Pro Cys
85 90 95
Phe Glu Leu Glu Glu Gly Glu Gly Cys Val Asp Trp Asn Phe Trp Leu
100 105 110
Glu Cys Thr Glu Ser Lys Ile Met Pro Val Ala Lys Leu Val Ser Ala
115 120 125
Ala Pro Tyr Gln Ala Gln Ala Glu Thr Gln Ser Gly Glu Gly Arg
130 135 140

<210> 175
<211> 142
<212> PRT

<213> Heloderma suspectum

<400> 175

Gly Ala Phe Ile Met Pro Gly Thr Leu Trp Cys Gly Ala Gly Asn Ala
1 5 10 15
Ala Ser Asp Tyr Ser Gln Leu Gly Thr Glu Lys Asp Thr Asp Met Cys
20 25 30
Cys Arg Asp His Asp His Cys Glu Asn Trp Ile Ser Ala Leu Glu Tyr
35 40 45
Lys His Gly Met Arg Asn Tyr Tyr Pro Ser Thr Ile Ser His Cys Asp
50 55 60
Cys Asp Asn Gln Phe Arg Ser Cys Leu Met Lys Leu Lys Asp Gly Thr
65 70 75 80
Ala Asp Tyr Val Gly Gln Thr Tyr Phe Asn Val Leu Lys Ile Pro Cys
85 90 95
Phe Glu Leu Glu Glu Gly Glu Gly Cys Val Asp Trp Asn Phe Trp Leu
100 105 110
Glu Cys Thr Glu Ser Lys Ile Met Pro Val Ala Lys Leu Val Ser Ala
115 120 125

Ala Pro Tyr Gln Ala Gln Ala Glu Thr Gln Ser Gly Glu Gly
130 135 140

<210> 176

<211> 574

<212> PRT

<213> IgE heavy chain

<400> 176

Met Asp Trp Thr Trp Ile Leu Phe Leu Val Ala Ala Ala Thr Arg Val
1 5 10 15
His Ser Gln Thr Gln Leu Val Gln Ser Gly Ala Glu Val Arg Lys Pro
20 25 30
Gly Ala Ser Val Arg Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Ile
35 40 45
Asp Ser Tyr Ile His Trp Ile Arg Gln Ala Pro Gly His Gly Leu Glu
50 55 60
Trp Val Gly Trp Ile Asn Pro Asn Ser Gly Gly Thr Asn Tyr Ala Pro
65 70 75 80
Arg Phe Gln Gly Arg Val Thr Met Thr Arg Asp Ala Ser Phe Ser Thr
85 90 95
Ala Tyr Met Asp Leu Arg Ser Leu Arg Ser Asp Asp Ser Ala Val Phe
100 105 110

Tyr	Cys	Ala	Lys	Ser	Asp	Pro	Phe	Trp	Ser	Asp	Tyr	Tyr	Asn	Phe	Asp	115	120	125
Tyr	Ser	Tyr	Thr	Leu	Asp	Val	Trp	Gly	Gln	Gly	Thr	Thr	Val	Thr	Val	130	135	140
Ser	Ser	Ala	Ser	Thr	Gln	Ser	Pro	Ser	Val	Phe	Pro	Leu	Thr	Arg	Cys	145	150	155
Cys	Lys	Asn	Ile	Pro	Ser	Asn	Ala	Thr	Ser	Val	Thr	Leu	Gly	Cys	Leu	165	170	175
Ala	Thr	Gly	Tyr	Phe	Pro	Glu	Pro	Val	Met	Val	Thr	Trp	Asp	Thr	Gly	180	185	190
Ser	Leu	Asn	Gly	Thr	Thr	Met	Thr	Leu	Pro	Ala	Thr	Thr	Leu	Thr	Leu	195	200	205
Ser	Gly	His	Tyr	Ala	Thr	Ile	Ser	Leu	Leu	Thr	Val	Ser	Gly	Ala	Trp	210	215	220
Ala	Lys	Gln	Met	Phe	Thr	Cys	Arg	Val	Ala	His	Thr	Pro	Ser	Ser	Thr	225	230	235
Asp	Trp	Val	Asp	Asn	Lys	Thr	Phe	Ser	Val	Cys	Ser	Arg	Asp	Phe	Thr	245	250	255
Pro	Pro	Thr	Val	Lys	Ile	Leu	Gln	Ser	Ser	Cys	Asp	Gly	Gly	Gly	His	260	265	270
Phe	Pro	Pro	Thr	Ile	Gln	Leu	Leu	Cys	Leu	Val	Ser	Gly	Tyr	Thr	Pro	275	280	285
Gly	Thr	Ile	Asn	Ile	Thr	Trp	Leu	Glu	Asp	Gly	Gln	Val	Met	Asp	Val	290	295	300
Asp	Leu	Ser	Thr	Ala	Ser	Thr	Thr	Gln	Glu	Gly	Glu	Leu	Ala	Ser	Thr	305	310	315
Gln	Ser	Glu	Leu	Thr	Leu	Ser	Gln	Lys	His	Trp	Leu	Ser	Asp	Arg	Thr	325	330	335
Tyr	Thr	Cys	Gln	Val	Thr	Tyr	Gln	Gly	His	Thr	Phe	Glu	Asp	Ser	Thr	340	345	350
Lys	Lys	Cys	Ala	Asp	Ser	Asn	Pro	Arg	Gly	Val	Ser	Ala	Tyr	Leu	Ser	355	360	365
Arg	Pro	Ser	Pro	Phe	Asp	Leu	Phe	Ile	Arg	Lys	Ser	Pro	Thr	Ile	Thr	370	375	380
Cys	Leu	Val	Val	Asp	Leu	Ala	Pro	Ser	Lys	Gly	Thr	Val	Asn	Leu	Thr	385	390	395
Trp	Ser	Arg	Ala	Ser	Gly	Lys	Pro	Val	Asn	His	Ser	Thr	Arg	Lys	Glu	405	410	415
Glu	Lys	Gln	Arg	Asn	Gly	Thr	Leu	Thr	Val	Thr	Ser	Thr	Leu	Pro	Val	420	425	430
Gly	Thr	Arg	Asp	Trp	Ile	Glu	Gly	Glu	Thr	Tyr	Gln	Cys	Arg	Val	Thr	435	440	445

His	Pro	His	Leu	Pro	Arg	Ala	Leu	Met	Arg	Ser	Thr	Thr	Lys	Thr	Ser
450						455					460				
Gly	Pro	Arg	Ala	Ala	Pro	Glu	Val	Tyr	Ala	Phe	Ala	Thr	Pro	Glu	Trp
465					470					475					480
Pro	Gly	Ser	Arg	Asp	Lys	Arg	Thr	Leu	Ala	Cys	Leu	Ile	Gln	Asn	Phe
				485					490					495	
Met	Pro	Glu	Asp	Ile	Ser	Val	Gln	Trp	Leu	His	Asn	Glu	Val	Gln	Leu
			500					505					510		
Pro	Asp	Ala	Arg	His	Ser	Thr	Thr	Gln	Pro	Arg	Lys	Thr	Lys	Gly	Ser
	515						520					525			
Gly	Phe	Phe	Val	Phe	Ser	Arg	Leu	Glu	Val	Thr	Arg	Ala	Glu	Trp	Glu
	530					535					540				
Gln	Lys	Asp	Glu	Phe	Ile	Cys	Arg	Ala	Val	His	Glu	Ala	Ala	Ser	Pro
545					550					555					560
Ser	Gln	Thr	Val	Gln	Arg	Ala	Val	Ser	Val	Asn	Pro	Gly	Lys		
				565					570						

<210> 177

<400> 177
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<210> 178

<211> 13

<212> PRT

<213> IgE Peptides

<400> 178

Cys	Gly	Gly	Val	Asn	Leu	Thr	Trp	Ser	Arg	Ala	Ser	Gly
1				5					10			

<210> 179

<211> 8

<212> PRT

<213> IgE Mimotype

<400> 179

Ile	Asn	His	Arg	Gly	Tyr	Trp	Val
1				5			

<210> 180

<211> 8

<212> PRT

<213> IgE Mimotype

<400> 180

Arg	Asn	His	Arg	Gly	Tyr	Trp	Val
1				5			

<210> 181
<211> 10
<212> PRT
<213> IgE Mimotype

<400> 181

Arg Ser Arg Ser Gly Gly Tyr Trp Leu Trp
1 5 10

<210> 182
<211> 10
<212> PRT
<213> IgE Mimotype

<400> 182

Val Asn Leu Thr Trp Ser Arg Ala Ser Gly
1 5 10

<210> 183
<211> 10
<212> PRT
<213> IgE Mimotype

<400> 183

Val Asn Leu Pro Trp Ser Arg Ala Ser Gly
1 5 10

<210> 184
<211> 10
<212> PRT
<213> IgE Mimotype

<400> 184

Val Asn Leu Thr Trp Ser Phe Gly Leu Glu
1 5 10

<210> 185
<211> 10
<212> PRT
<213> IgE Mimotype

<400> 185

Val Asn Leu Pro Trp Ser Phe Gly Leu Glu
1 5 10

<210> 186
<211> 10
<212> PRT
<213> IgE Mimotype

<400> 186

Val Asn Arg Pro Trp Ser Phe Gly Leu Glu
1 5 10

<210> 187

<211> 10
<212> PRT
<213> IgE Mimotype

<400> 187
Val Lys Leu Pro Trp Arg Phe Tyr Gln Val
1 5 10

<210> 188
<211> 10
<212> PRT
<213> IgE Mimotype

<400> 188
Val Trp Thr Ala Cys Gly Tyr Gly Arg Met
1 5 10

<210> 189
<211> 7
<212> PRT
<213> IgE Mimotype

<400> 189
Gly Thr Val Ser Thr Leu Ser
1 5

<210> 190
<211> 7
<212> PRT
<213> IgE Mimotype

<400> 190
Leu Leu Asp Ser Arg Tyr Trp
1 5

<210> 191
<211> 7
<212> PRT
<213> IgE Mimotype

<400> 191
Gln Pro Ala His Ser Leu Gly
1 5

<210> 192
<211> 7
<212> PRT
<213> IgE Mimotype

<400> 192
Leu Trp Gly Met Gln Gly Arg
1 5

<210> 193
<211> 15

<212> PRT
<213> IgE Mimotype

<400> 193
Leu Thr Leu Ser His Pro His Trp Val Leu Asn His Phe Val Ser
1 5 10 15

<210> 194
<211> 9
<212> PRT
<213> IgE Mimotype

<400> 194
Ser Met Gly Pro Asp Gln Thr Leu Arg
1 5

<210> 195
<211> 6
<212> PRT
<213> IgE Mimotype

<400> 195
Val Asn Leu Thr Trp Ser
1 5

<210> 196
<211> 56
<212> DNA
<213> Oligonucleotide Primer

<400> 196
tagatgatta cgccaagctt ataatagaaa tagttttttg aaaggaaagc agcatg 56

<210> 197
<211> 45
<212> DNA
<213> Oligonucleotide Primer

<400> 197
gtcaaaggcc ttgtcgacgt tattccatta cgcccgtcat tttgg 45

<210> 198
<211> 4623
<212> DNA
<213> pFIMAIC

<400> 198
agacgaaagg gcctcgtgat acgcctat ttatagggtta atgtcatgat aataatgggtt 60
tcttagacgt cagggtggcac ttttcgggga aatgtgcgcg gaacccttat ttgtttat 120
ttctaaatac attcaaatat gtatccgctc atgagacaat aaccctgata aatgcttcaa 180
taatattgaa aaaggaagag tatgagtatt caacatttcc gtgtcgccct tattcccttt 240
tttgcgcat tttgccttcc tgtttttgct caccagaaa cgctggtgaa agtaaaagat 300

gctgaagatc agttgggtgc acgagtgggt tacatcgaac tggatctcaa cagcggtaag	360
atccttgaga gttttcgccc cgaagaacgt tttccaatga tgagcacttt taaagttctg	420
ctatgtggcg cggattatc ccgtattgac gccgggcaag agcaactcgg tcgccgcata	480
cactattctc agaatgactt ggttgagtac tcaccagtca cagaaaagca tcttacggat	540
ggcatgacag taagagaatt atgcagtgt gccataacca tgagtataa cactgcggcc	600
aacttacttc tgacaacgat cggaggaccg aaggagctaa ccgctttttt gcacaacatg	660
ggggatcatg taactcgcct tgatcgttg gaaccggagc tgaatgaagc cataccaaac	720
gacgagcgtg acaccacgat gcctgtagca atggcaacaa cgttgcgcaa actattaact	780
ggcgaaactac ttactctagc ttcccgca caattaatag actggatgga ggcggataaa	840
gttgaggac cacttctgcg ctcgccctt ccggctggct ggtttattgc tgataaatct	900
ggagccgtg agcgtgggtc tcgcggtatc attgcagcac tggggccaga tggtaagccc	960
tcccgtatcg tagttatcta cagcagggg agtcaggcaa ctatggatga acgaaataga	1020
cagatcgctg agatagggtc ctactgatt aagcattgg aactgtcaga ccaagtttac	1080
tcatatatac tttagattga tttaaaactt ctttttaat ttaaaaggat ctaggtgaag	1140
atcctttttg ataatctcat gacaaaatc ccttaacgtg agttttcgtt ccactgagcg	1200
tcagaccccg tagaaaagat caaaggatct tcttgagatc ctttttttct gcgcgtaatc	1260
tgctgcttgc aaacaaaaaa accaccgcta ccagcgggtg tttgtttgcc ggatcaagag	1320
ctaccaactc tttttccgaa ggtaactggc ttcagcagag cgcagatacc aaatactgtc	1380
cttctagtgt agccgtagt aggccaccac ttcaagaact ctgtagcacc gcctacatac	1440
ctcgtcttgc taatcctgtt accagtggct gctgccagtg gcgataagtc gtgtcttacc	1500
gggttgact caagacgata gttaccggat aaggcgcagc ggtcgggctg aacggggggt	1560
togtgcacac agcccagctt ggagcgaacg acctacaccg aactgagata cctacagcgt	1620
gagctatgag aaagcgccac gcttcccga gggagaaagg cggacaggt tccggtaagc	1680
ggcagggctg gaacaggaga gcgcacgagg gagcttccag ggggaaacgc ctggtatctt	1740
tatagtcttg tcgggtttcg ccacctctga cttgagcgtc gatttttgtg atgctcgtca	1800
ggggggcgga gcctatggaa aaacgccagc aacgcggcct ttttacggtt cctggccttt	1860
tgctggcctt ttgctcacat gttctttcct gcgttatccc ctgattctgt ggataaccgt	1920
attaccgctt ttgagtgagc tgataccgt cgcgcagcc gaacgaccga gcgcagcgag	1980
tcagtgagcg aggaagcgga agagcgccca atacgaaaac cgctctccc cgcgcgttg	2040
ccgattcatt aatgcagctg gcacgacagg tttccgact ggaaagcggg cagtgcgcgc	2100
aacgcaatta atgtgagtta gtcactcat taggcacccc aggctttaca ctttatgctt	2160

ccggctcgta	tgttgtgtgg	aattgtgagc	ggataacaat	ttcacacagg	aaacagctat	2220
gaccatgatt	acgccaagct	tataatagaa	atagtttttt	gaaaggaaag	cagcatgaaa	2280
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Lys His Gly Leu Thr Asn Thr Ala Ser His Thr Arg Leu Ser Cys Asp
50 55 60
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Ser Ser Tyr Phe Val Gly Lys Met Tyr Phe Asn Leu Ile Asp Thr Lys
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Cys Tyr Lys Leu Glu His Pro Val Thr Gly Cys Gly Glu Arg Thr Glu
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Gly
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<213> Matrix protein M2

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Ile Gly Ile Leu His Leu Ile Leu Trp Ile Leu Asp Arg Leu Phe Phe
          35          40          45
Lys Cys Ile Tyr Arg Arg Phe Lys Tyr Gly Leu Lys Gly Gly Pro Ser
          50          55          60
Thr Glu Gly Val Pro Lys Ser Met Arg Glu Glu Tyr Arg Lys Glu Gln
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Gln Ser Ala Val Asp Ala Asp Asp Gly His Phe Val Ser Ile Glu Leu
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Glu

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<211> 42

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<213> Bacteriophage f2

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Ile Ser Ser Asn Ser Arg Ser Gln Ala Tyr Lys Val Thr Cys Ser Val
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Arg Gln Ser Ser Ala Gln Asn Arg Lys Tyr Thr Ile Lys Val Glu Val
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Pro Lys Val Ala Thr Gln Thr Val Gly Gly Val Glu Leu Pro Val Ala
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Ala Trp Arg Ser Tyr Leu Asn Leu Glu Leu Thr Ile Pro Ile Phe Ala
          85          90          95

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Thr Asn Ser Asp Cys Glu Leu Ile Val Lys Ala Met Gln Gly Leu Leu
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Tyr

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Ala

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<400> 217

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Val Thr Val Ser Val Ser Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys
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Val Gln Val Lys Ile Gln Asn Pro Thr Ala Cys Thr Ala Asn Gly Ser
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Cys Asp Pro Ser Val Thr Arg Gln Ala Tyr Ala Asp Val Thr Phe Ser
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Phe Thr Gln Tyr Ser Thr Asp Glu Glu Arg Ala Phe Val Arg Thr Glu
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Leu Ala Ala Leu Leu Ala Ser Pro Leu Leu Ile Asp Ala Ile Asp Gln
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Leu Asn Pro Ala Tyr Trp Thr Leu Leu Ile Ala Gly Gly Gly Ser Gly
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Ser Lys Pro Asp Pro Val Ile Pro Asp Pro Pro Ile Asp Pro Pro Pro
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Gly Thr Gly Lys Tyr Thr Cys Pro Phe Ala Ile Trp Ser Leu Glu Glu
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Val Tyr Glu Pro Pro Thr Lys Asn Arg Pro Trp Pro Ile Tyr Asn Ala
180 185 190

Val Glu Leu Gln Pro Arg Glu Phe Asp Val Ala Leu Lys Asp Leu Leu
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Gly Asn Thr Lys Trp Arg Asp Trp Asp Ser Arg Leu Ser Tyr Thr Thr
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Gly Lys Lys Pro Gly Ala Phe Gly Asn Ile Glu Arg Phe Ile Tyr Leu
260 265 270

Lys Ser Ile Asn Ala Tyr Cys Ser Leu Ser Asp Ile Ala Ala Tyr His
275 280 285

Ala Asp Gly Val Ile Val Gly Phe Trp Arg Asp Pro Ser Ser Gly Gly
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Ala Ile Pro Phe Asp Phe Thr Lys Phe Asp Lys Thr Lys Cys Pro Ile
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Gln Ala Val Ile Val Val Pro Arg Ala
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<211> 770

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<213> Amyloid-Beta Protein (Homo Sapiens)

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Asn Gly Lys Trp Asp Ser Asp Pro Ser Gly Thr Lys Thr Cys Ile Asp
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Thr Lys Glu Gly Ile Leu Gln Tyr Cys Gln Glu Val Tyr Pro Glu Leu
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Gln Ile Thr Asn Val Val Glu Ala Asn Gln Pro Val Thr Ile Gln Asn
85 90 95

Trp Cys Lys Arg Gly Arg Lys Gln Cys Lys Thr His Pro His Phe Val
100 105 110

Ile Pro Tyr Arg Cys Leu Val Gly Glu Phe Val Ser Asp Ala Leu Leu
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Ser	Asp	Asn	Val	Asp	Ser	Ala	Asp	Ala	Glu	Glu	Asp	Asp	Ser	Asp	Val		
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 485 490 495
 Tyr Val Arg Ala Glu Gln Lys Asp Arg Gln His Thr Leu Lys His Phe
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 Glu His Val Arg Met Val Asp Pro Lys Lys Ala Ala Gln Ile Arg Ser
 515 520 525
 Gln Val Met Thr His Leu Arg Val Ile Tyr Glu Arg Met Asn Gln Ser
 530 535 540
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 545 550 555 560
 Glu Val Asp Glu Leu Leu Gln Lys Glu Gln Asn Tyr Ser Asp Asp Val
 565 570 575
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 580 585 590
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 595 600 605
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 Glu Val Asp Ala Ala Val Thr Pro Glu Glu Arg His Leu Ser Lys Met
 740 745 750
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 Gln Asn
 770

<210> 219
 <211> 82

<212> PRT
<213> Beta-Amyloid Peptide Precursor (Homo Sapiens)

<400> 219

Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Val Lys
1 5 10 15
Met Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln
20 25 30
Lys Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile
35 40 45
Ile Gly Leu Met Val Gly Gly Val Val Ile Ala Thr Val Ile Ile Ile
50 55 60
Thr Leu Val Met Leu Lys Lys Gln Tyr Thr Ser Asn His His Gly Val
65 70 75 80
Val Glu

<210> 220
<211> 42
<212> PRT
<213> Amyloid Beta Peptide

<400> 220

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
1 5 10 15
Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
20 25 30
Gly Leu Met Val Gly Gly Val Val Ile Ala
35 40

<210> 221
<211> 249
<212> PRT
<213> Homo sapiens

<400> 221

Tyr Phe Arg Ala Gln Met Asp Pro Asn Arg Ile Ser Glu Asp Gly Thr
1 5 10 15
His Cys Ile Tyr Arg Ile Leu Arg Leu His Glu Asn Ala Asp Phe Gln
20 25 30
Asp Thr Thr Leu Glu Ser Gln Asp Thr Lys Leu Ile Pro Asp Ser Cys
35 40 45
Arg Arg Ile Lys Gln Ala Phe Gln Gly Ala Val Gln Lys Glu Leu Gln

50		55		60
His Ile Val Gly Ser Gln His Ile Arg Ala Glu Lys Ala Met Val Asp				
65		70		75
				80
Gly Ser Trp Leu Asp Leu Ala Lys Arg Ser Lys Leu Glu Ala Gln Pro				
	85		90	95
Phe Ala His Leu Thr Ile Asn Ala Thr Asp Ile Pro Ser Gly Ser His				
	100		105	110
Lys Val Ser Leu Ser Ser Trp Tyr His Asp Arg Gly Trp Ala Lys Ile				
	115		120	125
Ser Asn Met Thr Phe Ser Asn Gly Lys Leu Ile Val Asn Gln Asp Gly				
	130		135	140
Phe Tyr Tyr Leu Tyr Ala Asn Ile Cys Phe Arg His His Glu Thr Ser				
145		150		155
				160
Gly Asp Leu Ala Thr Glu Tyr Leu Gln Leu Met Val Tyr Val Thr Lys				
	165		170	175
Thr Ser Ile Lys Ile Pro Ser Ser His Thr Leu Met Lys Gly Gly Ser				
	180		185	190
Thr Lys Tyr Trp Ser Gly Asn Ser Glu Phe His Phe Tyr Ser Ile Asn				
	195		200	205
Val Gly Gly Phe Phe Lys Leu Arg Ser Gly Glu Glu Ile Ser Ile Glu				
	210		215	220
Val Ser Asn Pro Ser Leu Leu Asp Pro Asp Gln Asp Ala Thr Tyr Phe				
225		230		235
				240
Gly Ala Phe Lys Val Arg Asp Ile Asp				
	245			

<210> 222
 <211> 244
 <212> PRT
 <213> Homo sapiens

<400> 222

Met Asp Pro Asn Arg Ile Ser Glu Asp Gly Thr His Cys Ile Tyr Arg
1 5 10 15

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Ile Leu Arg Leu His Glu Asn Ala Asp Phe Gln Asp Thr Thr Leu Glu
20 25 30

Ser Gln Asp Thr Lys Leu Ile Pro Asp Ser Cys Arg Arg Ile Lys Gln
35 40 45

Ala Phe Gln Gly Ala Val Gln Lys Glu Leu Gln His Ile Val Gly Ser
50 55 60

Gln His Ile Arg Ala Glu Lys Ala Met Val Asp Gly Ser Trp Leu Asp
65 70 75 80

Leu Ala Lys Arg Ser Lys Leu Glu Ala Gln Pro Phe Ala His Leu Thr
85 90 95

Ile Asn Ala Thr Asp Ile Pro Ser Gly Ser His Lys Val Ser Leu Ser
100 105 110

Ser Trp Tyr His Asp Arg Gly Trp Ala Lys Ile Ser Asn Met Thr Phe
115 120 125

Ser Asn Gly Lys Leu Ile Val Asn Gln Asp Gly Phe Tyr Tyr Leu Tyr
130 135 140

Ala Asn Ile Cys Phe Arg His His Glu Thr Ser Gly Asp Leu Ala Thr
145 150 155 160

Glu Tyr Leu Gln Leu Met Val Tyr Val Thr Lys Thr Ser Ile Lys Ile
165 170 175

Pro Ser Ser His Thr Leu Met Lys Gly Gly Ser Thr Lys Tyr Trp Ser
180 185 190

Gly Asn Ser Glu Phe His Phe Tyr Ser Ile Asn Val Gly Gly Phe Phe
195 200 205

Lys Leu Arg Ser Gly Glu Glu Ile Ser Ile Glu Val Ser Asn Pro Ser
210 215 220

Leu Leu Asp Pro Asp Gln Asp Ala Thr Tyr Phe Gly Ala Phe Lys Val
225 230 235 240

Arg Asp Ile Asp

<210> 223

<211> 247

<212> PRT

<213> Mus musculus

<400> 223

Tyr Phe Arg Ala Gln Met Asp Pro Asn Arg Ile Ser Glu Asp Ser Thr
1 5 10 15

His Cys Phe Tyr Arg Ile Leu Arg Leu His Glu Asn Ala Gly Leu Gln
20 25 30

Asp Ser Thr Leu Glu Ser Glu Asp Thr Leu Pro Asp Ser Cys Arg Arg
35 40 45

Met Lys Gln Ala Phe Gln Gly Ala Val Gln Lys Glu Leu Gln His Ile
50 55 60

Val Gly Pro Gln Arg Phe Ser Gly Ala Pro Ala Met Met Glu Gly Ser
65 70 75 80

Trp Leu Asp Val Ala Gln Arg Gly Lys Pro Glu Ala Gln Pro Phe Ala
85 90 95

His Leu Thr Ile Asn Ala Ala Ser Ile Pro Ser Gly Ser His Lys Val
100 105 110

Thr Leu Ser Ser Trp Tyr His Asp Arg Gly Trp Ala Lys Ile Ser Asn
115 120 125

Met Thr Leu Ser Asn Gly Lys Leu Arg Val Asn Gln Asp Gly Phe Tyr
130 135 140

Tyr Leu Tyr Ala Asn Ile Cys Phe Arg His His Glu Thr Ser Gly Ser
145 150 155 160

Val Pro Thr Asp Tyr Leu Gln Leu Met Val Tyr Val Val Lys Thr Ser
165 170 175

Ile Lys Ile Pro Ser Ser His Asn Leu Met Lys Gly Gly Ser Thr Lys
180 185 190

Asn Trp Ser Gly Asn Ser Glu Phe His Phe Tyr Ser Ile Asn Val Gly
195 200 205

Gly Phe Phe Lys Leu Arg Ala Gly Glu Glu Ile Ser Ile Gln Val Ser
210 215 220

Asn Pro Ser Leu Leu Asp Pro Asp Gln Asp Ala Thr Tyr Phe Gly Ala

225

230

235

240

Phe Lys Val Gln Asp Ile Asp
245

<210> 224

<211> 199

<212> PRT

<213> Mus musculus

<400> 224

Met Lys Gln Ala Phe Gln Gly Ala Val Gln Lys Glu Leu Gln His Ile
1 5 10 15

Val Gly Pro Gln Arg Phe Ser Gly Ala Pro Ala Met Met Glu Gly Ser
20 25 30

Trp Leu Asp Val Ala Gln Arg Gly Lys Pro Glu Ala Gln Pro Phe Ala
35 40 45

His Leu Thr Ile Asn Ala Ala Ser Ile Pro Ser Gly Ser His Lys Val
50 55 60

Thr Leu Ser Ser Trp Tyr His Asp Arg Gly Trp Ala Lys Ile Ser Asn
65 70 75 80

Met Thr Leu Ser Asn Gly Lys Leu Arg Val Asn Gln Asp Gly Phe Tyr
85 90 95

Tyr Leu Tyr Ala Asn Ile Cys Phe Arg His His Glu Thr Ser Gly Ser
100 105 110

Val Pro Thr Asp Tyr Leu Gln Leu Met Val Tyr Val Val Lys Thr Ser
115 120 125

Ile Lys Ile Pro Ser Ser His Asn Leu Met Lys Gly Gly Ser Thr Lys
130 135 140

Asn Trp Ser Gly Asn Ser Glu Phe His Phe Tyr Ser Ile Asn Val Gly
145 150 155 160

Gly Phe Phe Lys Leu Arg Ala Gly Glu Glu Ile Ser Ile Gln Val Ser
165 170 175

Asn Pro Ser Leu Leu Asp Pro Asp Gln Asp Ala Thr Tyr Phe Gly Ala
180 185 190

Phe Lys Val Gln Asp Ile Asp
195

<210> 225
<211> 114
<212> PRT
<213> Rattus sp.

<400> 225

Pro Met Phe Ile Val Asn Thr Asn Val Pro Arg Ala Ser Val Pro Glu
1 5 10 15

Gly Phe Leu Ser Glu Leu Thr Gln Gln Leu Ala Gln Ala Thr Gly Lys
20 25 30

Pro Ala Gln Tyr Ile Ala Val His Val Val Pro Asp Gln Leu Met Thr
35 40 45

Phe Ser Gly Thr Ser Asp Pro Cys Ala Leu Cys Ser Leu His Ser Ile
50 55 60

Gly Lys Ile Gly Gly Ala Gln Asn Arg Asn Tyr Ser Lys Leu Leu Cys
65 70 75 80

Gly Leu Leu Ser Asp Arg Leu His Ile Ser Pro Asp Arg Val Tyr Ile
85 90 95

Asn Tyr Tyr Asp Met Asn Ala Ala Asn Val Gly Trp Asn Gly Ser Thr
100 105 110

Phe Ala

<210> 226
<211> 114
<212> PRT
<213> Mus musculus

<400> 226

Pro Met Phe Ile Val Asn Thr Asn Val Pro Arg Ala Ser Val Pro Glu
1 5 10 15

Gly Phe Leu Ser Glu Leu Thr Gln Gln Leu Ala Gln Ala Thr Gly Lys
20 25 30

Pro Ala Gln Tyr Ile Ala Val His Val Val Pro Asp Gln Leu Met Thr
35 40 45

Phe Ser Gly Thr Asn Asp Pro Cys Ala Leu Cys Ser Leu His Ser Ile
50 55 60

Gly Lys Ile Gly Gly Ala Gln Asn Arg Asn Tyr Ser Lys Leu Leu Cys
65 70 75 80

Gly Leu Leu Ser Asp Arg Leu His Ile Ser Pro Asp Arg Val Tyr Ile
85 90 95

Asn Tyr Tyr Asp Met Asn Ala Ala Asn Val Gly Trp Asn Gly Ser Thr
100 105 110

Phe Ala

<210> 227
<211> 114
<212> PRT
<213> Homo sapiens

<400> 227

Pro Met Phe Ile Val Asn Thr Asn Val Pro Arg Ala Ser Val Pro Asp
1 5 10 15

Gly Phe Leu Ser Glu Leu Thr Gln Gln Leu Ala Gln Ala Thr Gly Lys
20 25 30

Pro Pro Gln Tyr Ile Ala Val His Val Val Pro Asp Gln Leu Met Ala
35 40 45

Phe Gly Gly Ser Ser Glu Pro Cys Ala Leu Cys Ser Leu His Ser Ile
50 55 60

Gly Lys Ile Gly Gly Ala Gln Asn Arg Ser Tyr Ser Lys Leu Leu Cys
65 70 75 80

Gly Leu Leu Ala Glu Arg Leu Arg Ile Ser Pro Asp Arg Val Tyr Ile
85 90 95

Asn Tyr Tyr Asp Met Asn Ala Ala Asn Val Gly Trp Asn Asn Ser Thr
100 105 110

Phe Ala

<210> 228
<211> 155
<212> PRT

<213> Homo sapiens

<400> 228

Met Thr Pro Gly Lys Thr Ser Leu Val Ser Leu Leu Leu Leu Leu Ser
1 5 10 15

Leu Glu Ala Ile Val Lys Ala Gly Ile Thr Ile Pro Arg Asn Pro Gly
20 25 30

Cys Pro Asn Ser Glu Asp Lys Asn Phe Pro Arg Thr Val Met Val Asn
35 40 45

Leu Asn Ile His Asn Arg Asn Thr Asn Thr Asn Pro Lys Arg Ser Ser
50 55 60

Asp Tyr Tyr Asn Arg Ser Thr Ser Pro Trp Asn Leu His Arg Asn Glu
65 70 75 80

Asp Pro Glu Arg Tyr Pro Ser Val Ile Trp Glu Ala Lys Cys Arg His
85 90 95

Leu Gly Cys Ile Asn Ala Asp Gly Asn Val Asp Tyr His Met Asn Ser
100 105 110

Val Pro Ile Gln Gln Glu Ile Leu Val Leu Arg Arg Glu Pro Pro His
115 120 125

Cys Pro Asn Ser Phe Arg Leu Glu Lys Ile Leu Val Ser Val Gly Cys
130 135 140

Thr Cys Val Thr Pro Ile Val His His Val Ala
145 150 155

<210> 229

<211> 158

<212> PRT

<213> Mus musculus

<400> 229

Met Ser Pro Gly Arg Ala Ser Ser Val Ser Leu Met Leu Leu Leu Leu
1 5 10 15

Leu Ser Leu Ala Ala Thr Val Lys Ala Ala Ala Ile Ile Pro Gln Ser
20 25 30

Ser Ala Cys Pro Asn Thr Glu Ala Lys Asp Phe Leu Gln Asn Val Lys
35 40 45

Val Asn Leu Lys Val Phe Asn Ser Leu Gly Ala Lys Val Ser Ser Arg
50 55 60

Arg Pro Ser Asp Tyr Leu Asn Arg Ser Thr Ser Pro Trp Thr Leu His
65 70 75 80

Arg Asn Glu Asp Pro Asp Arg Tyr Pro Ser Val Ile Trp Glu Ala Gln
85 90 95

Cys Arg His Gln Arg Cys Val Asn Ala Glu Gly Lys Leu Asp His His
100 105 110

Met Asn Ser Val Leu Ile Gln Gln Glu Ile Leu Val Leu Lys Arg Glu
115 120 125

Pro Glu Ser Cys Pro Phe Thr Phe Arg Val Glu Lys Met Leu Val Gly
130 135 140

Val Gly Cys Thr Cys Val Ala Ser Ile Val Arg Gln Ala Ala
145 150 155

<210> 230

<211> 132

<212> PRT

<213> Homo sapiens

<400> 230

Met Ala Leu Leu Leu Thr Thr Val Ile Ala Leu Thr Cys Leu Gly Gly
1 5 10 15

Phe Ala Ser Pro Gly Pro Val Pro Pro Ser Thr Ala Leu Arg Glu Leu
20 25 30

Ile Glu Glu Leu Val Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys
35 40 45

Asn Gly Ser Met Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys
50 55 60

Ala Ala Leu Glu Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu
65 70 75 80

Lys Thr Gln Arg Met Leu Ser Gly Phe Cys Pro His Lys Val Ser Ala
85 90 95

Gly Gln Phe Ser Ser Leu His Val Arg Asp Thr Lys Ile Glu Val Ala
100 105 110

Gln Phe Val Lys Asp Leu Leu Leu His Leu Lys Lys Leu Phe Arg Glu
 115 120 125

Gly Arg Phe Asn
 130

<210> 231
 <211> 112
 <212> PRT
 <213> Homo sapiens

<400> 231

Gly Pro Val Pro Pro Ser Thr Ala Leu Arg Glu Leu Ile Glu Glu Leu
 1 5 10 15

Val Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met
 20 25 30

Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Glu
 35 40 45

Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu Lys Thr Gln Arg
 50 55 60

Met Leu Ser Gly Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser
 65 70 75 80

Ser Leu His Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Lys
 85 90 95

Asp Leu Leu Leu His Leu Lys Lys Leu Phe Arg Glu Gly Arg Phe Asn
 100 105 110

<210> 232
 <211> 111
 <212> PRT
 <213> Mus musculus

<400> 232

Gly Pro Val Pro Arg Ser Val Ser Leu Pro Leu Thr Leu Lys Glu Leu
 1 5 10 15

Ile Glu Glu Leu Ser Asn Ile Thr Gln Asp Gln Thr Pro Leu Cys Asn
 20 25 30

Gly Ser Met Val Trp Ser Val Asp Leu Ala Ala Gly Gly Phe Cys Val
 35 40 45

Ala Leu Asp Ser Leu Thr Asn Ile Ser Asn Cys Asn Ala Ile Tyr Arg
50 55 60

Thr Gln Arg Ile Leu His Gly Leu Cys Asn Arg Lys Ala Pro Thr Thr
65 70 75 80

Val Ser Ser Leu Pro Asp Thr Lys Ile Glu Val Ala His Phe Ile Thr
85 90 95

Lys Leu Leu Ser Tyr Thr Lys Gln Leu Phe Arg His Gly Pro Phe
100 105 110

<210> 233
<211> 134
<212> PRT
<213> Homo sapiens

<400> 233

Met Arg Met Leu Leu His Leu Ser Leu Leu Ala Leu Gly Ala Ala Tyr
1 5 10 15

Val Tyr Ala Ile Pro Thr Glu Ile Pro Thr Ser Ala Leu Val Lys Glu
20 25 30

Thr Leu Ala Leu Leu Ser Thr His Arg Thr Leu Leu Ile Ala Asn Glu
35 40 45

Thr Leu Arg Ile Pro Val Pro Val His Lys Asn His Gln Leu Cys Thr
50 55 60

Glu Glu Ile Phe Gln Gly Ile Gly Thr Leu Glu Ser Gln Thr Val Gln
65 70 75 80

Gly Gly Thr Val Glu Arg Leu Phe Lys Asn Leu Ser Leu Ile Lys Lys
85 90 95

Tyr Ile Asp Gly Gln Lys Lys Lys Cys Gly Glu Glu Arg Arg Arg Val
100 105 110

Asn Gln Phe Leu Asp Tyr Leu Gln Glu Phe Leu Gly Val Met Asn Thr
115 120 125

Glu Trp Ile Ile Glu Ser
130

<210> 234
<211> 115
<212> PRT

<213> Homo sapiens

<400> 234

Ile Pro Thr Glu Ile Pro Thr Ser Ala Leu Val Lys Glu Thr Leu Ala
1 5 10 15

Leu Leu Ser Thr His Arg Thr Leu Leu Ile Ala Asn Glu Thr Leu Arg
20 25 30

Ile Pro Val Pro Val His Lys Asn His Gln Leu Cys Thr Glu Glu Ile
35 40 45

Phe Gln Gly Ile Gly Thr Leu Glu Ser Gln Thr Val Gln Gly Gly Thr
50 55 60

Val Glu Arg Leu Phe Lys Asn Leu Ser Leu Ile Lys Lys Tyr Ile Asp
65 70 75 80

Gly Gln Lys Lys Lys Cys Gly Glu Glu Arg Arg Arg Val Asn Gln Phe
85 90 95

Leu Asp Tyr Leu Gln Glu Phe Leu Gly Val Met Asn Thr Glu Trp Ile
100 105 110

Ile Glu Ser
115

<210> 235

<211> 113

<212> PRT

<213> Mus musculus

<400> 235

Met Glu Ile Pro Met Ser Thr Val Val Lys Glu Thr Leu Thr Gln Leu
1 5 10 15

Ser Ala His Arg Ala Leu Leu Thr Ser Asn Glu Thr Met Arg Leu Pro
20 25 30

Val Pro Thr His Lys Asn His Gln Leu Cys Ile Gly Glu Ile Phe Gln
35 40 45

Gly Leu Asp Ile Leu Lys Asn Gln Thr Val Arg Gly Gly Thr Val Glu
50 55 60

Met Leu Phe Gln Asn Leu Ser Leu Ile Lys Lys Tyr Ile Asp Arg Gln
65 70 75 80

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Lys Glu Lys Cys Gly Glu Glu Arg Arg Arg Thr Arg Gln Phe Leu Asp
85 90 95

Tyr Leu Gln Glu Phe Leu Gly Val Met Ser Thr Glu Trp Ala Met Glu
100 105 110

Gly

<210> 236
<211> 111
<212> PRT
<213> Homo sapiens

<400> 236

Ser Asp Gly Gly Ala Gln Asp Cys Cys Leu Lys Tyr Ser Gln Arg Lys
1 5 10 15

Ile Pro Ala Lys Val Val Arg Ser Tyr Arg Lys Gln Glu Pro Ser Leu
20 25 30

Gly Cys Ser Ile Pro Ala Ile Leu Phe Leu Pro Arg Lys Arg Ser Gln
35 40 45

Ala Glu Leu Cys Ala Asp Pro Lys Glu Leu Trp Val Gln Gln Leu Met
50 55 60

Gln His Leu Asp Lys Thr Pro Ser Pro Gln Lys Pro Ala Gln Gly Cys
65 70 75 80

Arg Lys Asp Arg Gly Ala Ser Lys Thr Gly Lys Lys Gly Lys Gly Ser
85 90 95

Lys Gly Cys Lys Arg Thr Glu Arg Ser Gln Thr Pro Lys Gly Pro
100 105 110

<210> 237
<211> 110
<212> PRT
<213> Mus musculus

<400> 237

Ser Asp Gly Gly Gly Gln Asp Cys Cys Leu Lys Tyr Ser Gln Lys Lys
1 5 10 15

Ile Pro Tyr Ser Ile Val Arg Gly Tyr Arg Lys Gln Glu Pro Ser Leu
20 25 30

Gly Cys Pro Ile Pro Ala Ile Leu Phe Ser Pro Arg Lys His Ser Lys
35 40 45

Pro Glu Leu Cys Ala Asn Pro Glu Glu Gly Trp Val Gln Asn Leu Met
50 55 60

Arg Arg Leu Asp Gln Pro Pro Ala Pro Gly Lys Gln Ser Pro Gly Cys
65 70 75 80

Arg Lys Asn Arg Gly Thr Ser Lys Ser Gly Lys Lys Gly Lys Gly Ser
85 90 95

Lys Gly Cys Lys Arg Thr Glu Gln Thr Gln Pro Ser Arg Gly
100 105 110

<210> 238

<211> 74

<212> PRT

<213> Homo sapiens

<400> 238

Asp Gly Lys Pro Val Ser Leu Ser Tyr Arg Cys Pro Cys Arg Phe Phe
1 5 10 15

Glu Ser His Val Ala Arg Ala Asn Val Lys His Leu Lys Ile Leu Asn
20 25 30

Thr Pro Asn Cys Ala Leu Gln Ile Val Ala Arg Leu Lys Asn Asn Asn
35 40 45

Arg Gln Val Cys Ile Asp Pro Lys Leu Lys Trp Ile Gln Glu Tyr Leu
50 55 60

Glu Lys Ala Leu Asn Lys Arg Phe Lys Met
65 70

<210> 239

<211> 70

<212> PRT

<213> Mus musculus

<400> 239

Asp Gly Lys Pro Val Ser Leu Ser Tyr Arg Cys Pro Cys Arg Phe Phe
1 5 10 15

Glu Ser His Ile Ala Arg Ala Asn Val Lys His Leu Lys Ile Leu Asn
20 25 30

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Thr Pro Asn Cys Ala Leu Gln Ile Val Ala Arg Leu Lys Asn Asn Asn
35 40 45

Arg Gln Val Cys Ile Asp Pro Lys Leu Lys Trp Ile Gln Glu Tyr Leu
50 55 60

Glu Lys Ala Leu Asn Lys
65 70

<210> 240
<211> 109
<212> PRT
<213> Homo sapiens

<400> 240

Met Lys Phe Ile Ser Thr Ser Leu Leu Leu Met Leu Leu Val Ser Ser
1 5 10 15

Leu Ser Pro Val Gln Gly Val Leu Glu Val Tyr Tyr Thr Ser Leu Arg
20 25 30

Cys Arg Cys Val Gln Glu Ser Ser Val Phe Ile Pro Arg Arg Phe Ile
35 40 45

Asp Arg Ile Gln Ile Leu Pro Arg Gly Asn Gly Cys Pro Arg Lys Glu
50 55 60

Ile Ile Val Trp Lys Lys Asn Lys Ser Ile Val Cys Val Asp Pro Gln
65 70 75 80

Ala Glu Trp Ile Gln Arg Met Met Glu Val Leu Arg Lys Arg Ser Ser
85 90 95

Ser Thr Leu Pro Val Pro Val Phe Lys Arg Lys Ile Pro
100 105

<210> 241
<211> 109
<212> PRT
<213> Mus musculus

<400> 241

Met Arg Leu Ser Thr Ala Thr Leu Leu Leu Leu Ala Ser Cys Leu
1 5 10 15

Ser Pro Gly His Gly Ile Leu Glu Ala His Tyr Thr Asn Leu Lys Cys
20 25 30

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Arg Cys Ser Gly Val Ile Ser Thr Val Val Gly Leu Asn Ile Ile Asp
35 40 45

Arg Ile Gln Val Thr Pro Pro Gly Asn Gly Cys Pro Lys Thr Glu Val
50 55 60

Val Ile Trp Thr Lys Met Lys Lys Val Ile Cys Val Asn Pro Arg Ala
65 70 75 80

Lys Trp Leu Gln Arg Leu Leu Arg His Val Gln Ser Lys Ser Leu Ser
85 90 95

Ser Thr Pro Gln Ala Pro Val Ser Lys Arg Arg Ala Ala
100 105

<210> 242
<211> 97
<212> PRT
<213> Homo sapiens

<400> 242

Met Lys Val Ser Ala Ala Leu Leu Trp Leu Leu Leu Ile Ala Ala Ala
1 5 10 15

Phe Ser Pro Gln Gly Leu Ala Gly Pro Ala Ser Val Pro Thr Thr Cys
20 25 30

Cys Phe Asn Leu Ala Asn Arg Lys Ile Pro Leu Gln Arg Leu Glu Ser
35 40 45

Tyr Arg Arg Ile Thr Ser Gly Lys Cys Pro Gln Lys Ala Val Ile Phe
50 55 60

Lys Thr Lys Leu Ala Lys Asp Ile Cys Ala Asp Pro Lys Lys Lys Trp
65 70 75 80

Val Gln Asp Ser Met Lys Tyr Leu Asp Gln Lys Ser Pro Thr Pro Lys
85 90 95

Pro

<210> 243
<211> 119
<212> PRT
<213> Homo sapiens

<400> 243

Met Ala Gly Leu Met Thr Ile Val Thr Ser Leu Leu Phe Leu Gly Val
1 5 10 15

Cys Ala His His Ile Ile Pro Thr Gly Ser Val Val Ile Pro Ser Pro
20 25 30

Cys Cys Met Phe Phe Val Ser Lys Arg Ile Pro Glu Asn Arg Val Val
35 40 45

Ser Tyr Gln Leu Ser Ser Arg Ser Thr Cys Leu Lys Ala Gly Val Ile
50 55 60

Phe Thr Thr Lys Lys Gly Gln Gln Phe Cys Gly Asp Pro Lys Gln Glu
65 70 75 80

Trp Val Gln Arg Tyr Met Lys Asn Leu Asp Ala Lys Gln Lys Lys Ala
85 90 95

Ser Pro Arg Ala Arg Ala Val Ala Val Lys Gly Pro Val Gln Arg Tyr
100 105 110

Pro Gly Asn Gln Thr Thr Cys
115

<210> 244
<211> 94
<212> PRT
<213> Homo sapiens

<400> 244

Met Met Gly Leu Ser Leu Ala Ser Ala Val Leu Leu Ala Ser Leu Leu
1 5 10 15

Ser Leu His Leu Gly Thr Ala Thr Arg Gly Ser Asp Ile Ser Lys Thr
20 25 30

Cys Cys Phe Gln Tyr Ser His Lys Pro Leu Pro Trp Thr Trp Val Arg
35 40 45

Ser Tyr Glu Phe Thr Ser Asn Ser Cys Ser Gln Arg Ala Val Ile Phe
50 55 60

Thr Thr Lys Arg Gly Lys Lys Val Cys Thr His Pro Arg Lys Lys Trp
65 70 75 80

Val Gln Lys Tyr Ile Ser Leu Leu Lys Thr Pro Lys Gln Leu
85 90

<210> 245
 <211> 97
 <212> PRT
 <213> Mus musculus

<400> 245

Met Gln Ser Ser Thr Ala Leu Leu Phe Leu Leu Leu Thr Val Thr Ser
 1 5 10 15

Phe Thr Ser Gln Val Leu Ala His Pro Gly Ser Ile Pro Thr Ser Cys
 20 25 30

Cys Phe Ile Met Thr Ser Lys Lys Ile Pro Asn Thr Leu Leu Lys Ser
 35 40 45

Tyr Lys Arg Ile Thr Asn Asn Arg Cys Thr Leu Lys Ala Ile Val Phe
 50 55 60

Lys Thr Arg Leu Gly Lys Glu Ile Cys Ala Asp Pro Lys Lys Lys Trp
 65 70 75 80

Val Gln Asp Ala Thr Lys His Leu Asp Gln Lys Leu Gln Thr Pro Lys
 85 90 95

Pro

<210> 246
 <211> 119
 <212> PRT
 <213> Mus musculus

<400> 246

Met Ala Gly Ser Ala Thr Ile Val Ala Gly Leu Leu Leu Leu Val Ala
 1 5 10 15

Cys Ala Cys Cys Ile Phe Pro Ile Asp Ser Val Thr Ile Pro Ser Ser
 20 25 30

Cys Cys Thr Ser Phe Ile Ser Lys Lys Ile Pro Glu Asn Arg Val Val
 35 40 45

Ser Tyr Gln Leu Ala Asn Gly Ser Ile Cys Pro Lys Ala Gly Val Ile
 50 55 60

Phe Ile Thr Lys Lys Gly His Lys Ile Cys Thr Asp Pro Lys Leu Leu
 65 70 75 80

Trp Val Gln Arg His Ile Gln Lys Leu Asp Ala Lys Lys Asn Gln Pro
85 90 95

Ser Lys Gly Ala Lys Ala Val Arg Thr Lys Phe Ala Val Gln Arg Arg
100 105 110

Arg Gly Asn Ser Thr Glu Val
115

<210> 247
<211> 553
<212> PRT
<213> Homo sapiens

<400> 247

Met Thr Ala Pro Gly Ala Ala Gly Arg Cys Pro Pro Thr Thr Trp Leu
1 5 10 15

Gly Ser Leu Leu Leu Val Cys Leu Leu Ala Ser Arg Ser Ile Thr
20 25 30

Glu Glu Val Ser Glu Tyr Cys Ser His Met Ile Gly Ser Gly His Leu
35 40 45

Gln Ser Leu Gln Arg Leu Ile Asp Ser Gln Met Glu Thr Ser Cys Gln
50 55 60

Ile Thr Phe Glu Phe Val Asp Gln Glu Gln Leu Lys Asp Pro Val Cys
65 70 75 80

Tyr Leu Lys Lys Ala Phe Leu Leu Val Gln Asp Ile Met Glu Asp Thr/
85 90 95

Met Arg Phe Arg Asp Asn Thr Pro Asn Ala Ile Ala Ile Val Gln Leu
100 105 110

Gln Glu Leu Ser Leu Arg Leu Lys Ser Cys Phe Thr Lys Asp Tyr Glu
115 120 125

Glu His Asp Lys Ala Cys Val Arg Thr Phe Tyr Glu Thr Pro Leu Gln
130 135 140

Leu Leu Glu Lys Val Lys Asn Val Phe Asn Glu Thr Lys Asn Leu Leu
145 150 155 160

Asp Lys Asp Trp Asn Ile Phe Ser Lys Asn Cys Asn Asn Ser Phe Ala
165 170 175

Glu	Cys	Ser	Ser	Gln	Asp	Val	Val	Thr	Lys	Pro	Asp	Cys	Asn	Cys	Leu
			180					185					190		
Tyr	Pro	Lys	Ala	Ile	Pro	Ser	Ser	Asp	Pro	Ala	Ser	Val	Ser	Pro	His
		195					200					205			
Gln	Pro	Leu	Ala	Pro	Ser	Met	Ala	Pro	Val	Ala	Gly	Leu	Thr	Trp	Glu
	210					215					220				
Asp	Ser	Glu	Gly	Thr	Glu	Gly	Ser	Ser	Leu	Leu	Pro	Gly	Glu	Gln	Pro
225					230					235					240
Leu	His	Thr	Val	Asp	Pro	Gly	Ser	Ala	Lys	Gln	Arg	Pro	Pro	Arg	Ser
				245					250					255	
Thr	Cys	Gln	Ser	Phe	Glu	Pro	Pro	Glu	Thr	Pro	Val	Val	Lys	Asp	Ser
			260					265					270		
Thr	Ile	Gly	Gly	Ser	Pro	Gln	Pro	Arg	Pro	Ser	Val	Gly	Ala	Phe	Asn
		275					280					285			
Pro	Gly	Met	Glu	Asp	Ile	Leu	Asp	Ser	Ala	Met	Gly	Thr	Asn	Trp	Val
	290					295					300				
Pro	Glu	Glu	Ala	Ser	Gly	Glu	Ala	Ser	Glu	Ile	Pro	Val	Pro	Gln	Gly
305					310					315					320
Thr	Glu	Leu	Ser	Pro	Ser	Arg	Pro	Gly	Gly	Gly	Ser	Met	Gln	Thr	Glu
				325					330					335	
Pro	Ala	Arg	Pro	Ser	Asn	Phe	Leu	Ser	Ala	Ser	Ser	Pro	Leu	Pro	Ala
			340					345					350		
Ser	Ala	Lys	Gly	Gln	Gln	Pro	Ala	Asp	Val	Thr	Gly	Thr	Ala	Leu	Pro
		355					360					365			
Arg	Val	Gly	Pro	Val	Arg	Pro	Thr	Gly	Gln	Asp	Trp	Asn	His	Thr	Pro
	370					375					380				
Gln	Lys	Thr	Asp	His	Pro	Ser	Ala	Leu	Leu	Arg	Asp	Pro	Pro	Glu	Pro
385					390					395					400
Gly	Ser	Pro	Arg	Ile	Ser	Ser	Pro	Arg	Pro	Gln	Gly	Leu	Ser	Asn	Pro
				405					410					415	
Ser	Thr	Leu	Ser	Ala	Gln	Pro	Gln	Leu	Ser	Arg	Ser	His	Ser	Ser	Gly
			420					425					430		

Ser Val Leu Pro Leu Gly Glu Leu Glu Gly Arg Arg Ser Thr Arg Asp
435 440 445

Arg Arg Ser Pro Ala Glu Pro Glu Gly Gly Pro Ala Ser Glu Gly Ala
450 455 460

Ala Arg Pro Leu Pro Arg Phe Asn Ser Val Pro Leu Thr Asp Thr His
465 470 475 480

Glu Arg Gln Ser Glu Gly Ser Ser Ser Pro Gln Leu Gln Glu Ser Val
485 490 495

Phe His Leu Leu Val Pro Ser Val Ile Leu Val Leu Leu Ala Val Gly
500 505 510

Gly Leu Leu Phe Tyr Arg Trp Arg Arg Arg Ser His Gln Glu Pro Gln
515 520 525

Arg Ala Asp Ser Pro Leu Glu Gln Pro Glu Gly Ser Pro Leu Thr Gln
530 535 540

Asp Asp Arg Gln Val Glu Leu Pro Val
545 550

<210> 248
<211> 552
<212> PRT
<213> Mus musculus

<400> 248

Met Thr Ala Arg Gly Ala Ala Gly Arg Cys Pro Ser Ser Thr Trp Leu
1 5 10 15

Gly Ser Arg Leu Leu Leu Val Cys Leu Leu Met Ser Arg Ser Ile Ala
20 25 30

Lys Glu Val Ser Glu His Cys Ser His Met Ile Gly Asn Gly His Leu
35 40 45

Lys Val Leu Gln Gln Leu Ile Asp Ser Gln Met Glu Thr Ser Cys Gln
50 55 60

Ile Ala Phe Glu Phe Val Asp Gln Glu Gln Leu Asp Asp Pro Val Cys
65 70 75 80

Tyr Leu Lys Lys Ala Phe Phe Leu Val Gln Asp Ile Ile Asp Glu Thr
85 90 95

Met Arg Phe Lys Asp Asn Thr Pro Asn Ala Asn Ala Thr Glu Arg Leu
100 105 110

Gln Glu Leu Ser Asn Asn Leu Asn Ser Cys Phe Thr Lys Asp Tyr Glu
115 120 125

Glu Gln Asn Lys Ala Cys Val Arg Thr Phe His Glu Thr Pro Leu Gln
130 135 140

Leu Leu Glu Lys Ile Lys Asn Phe Phe Asn Glu Thr Lys Asn Leu Leu
145 150 155 160

Glu Lys Asp Trp Asn Ile Phe Thr Lys Asn Cys Asn Asn Ser Phe Ala
165 170 175

Lys Cys Ser Ser Arg Asp Val Val Thr Lys Pro Asp Cys Asn Cys Leu
180 185 190

Tyr Pro Lys Ala Thr Pro Ser Ser Asp Pro Ala Ser Ala Ser Pro His
195 200 205

Gln Pro Pro Ala Pro Ser Met Ala Pro Leu Ala Gly Leu Ala Trp Asp
210 215 220

Asp Ser Gln Arg Thr Glu Gly Ser Ser Leu Leu Pro Ser Glu Leu Pro
225 230 235 240

Leu Arg Ile Glu Asp Pro Gly Ser Ala Lys Gln Arg Pro Pro Arg Ser
245 250 255

Thr Cys Gln Thr Leu Glu Ser Thr Glu Gln Pro Asn His Gly Asp Arg
260 265 270

Leu Thr Glu Asp Ser Gln Pro His Pro Ser Ala Gly Gly Pro Val Pro
275 280 285

Gly Val Glu Asp Ile Leu Glu Ser Ser Leu Gly Thr Asn Trp Val Leu
290 295 300

Glu Glu Ala Ser Gly Glu Ala Ser Glu Gly Phe Leu Thr Gln Glu Ala
305 310 315 320

Lys Phe Ser Pro Ser Thr Pro Val Gly Gly Ser Ile Gln Ala Glu Thr
325 330 335

Asp Arg Pro Arg Ala Leu Ser Ala Ser Pro Phe Pro Lys Ser Thr Glu

340	345	350
Asp Gln Lys Pro Val Asp Ile Thr Asp Arg Pro Leu Thr Glu Val Asn 355 360 365		
Pro Met Arg Pro Ile Gly Gln Thr Gln Asn Asn Thr Pro Glu Lys Thr 370 375 380		
Asp Gly Thr Ser Thr Leu Arg Glu Asp His Gln Glu Pro Gly Ser Pro 385 390 395 400		
His Ile Ala Thr Pro Asn Pro Gln Arg Val Ser Asn Ser Ala Thr Pro 405 410 415		
Val Ala Gln Leu Leu Leu Pro Lys Ser His Ser Trp Gly Ile Val Leu 420 425 430		
Pro Leu Gly Glu Leu Glu Gly Lys Arg Ser Thr Arg Asp Arg Arg Ser 435 440 445		
Pro Ala Glu Leu Glu Gly Gly Ser Ala Ser Glu Gly Ala Ala Arg Pro 450 455 460		
Val Ala Arg Phe Asn Ser Ile Pro Leu Thr Asp Thr Gly His Val Glu 465 470 475 480		
Gln His Glu Gly Ser Ser Asp Pro Gln Ile Pro Glu Ser Val Phe His 485 490 495		
Leu Leu Val Pro Gly Ile Ile Leu Val Leu Leu Thr Val Gly Gly Leu 500 505 510		
Leu Phe Tyr Lys Trp Lys Trp Arg Ser His Arg Asp Pro Gln Thr Leu 515 520 525		
Asp Ser Ser Val Gly Arg Pro Glu Asp Ser Ser Leu Thr Gln Asp Glu 530 535 540		
Asp Arg Gln Val Glu Leu Pro Val 545 550		

<210> 249
 <211> 108
 <212> PRT
 <213> Homo sapiens
 <400> 249

Met Lys Ala Leu Cys Leu Leu Leu Leu Pro Val Leu Gly Leu Leu Val
1 5 10 15

Ser Ser Lys Thr Leu Cys Ser Met Glu Glu Ala Ile Asn Glu Arg Ile
20 25 30

Gln Glu Val Ala Gly Ser Leu Ile Phe Arg Ala Ile Ser Ser Ile Gly
35 40 45

Leu Glu Cys Gln Ser Val Thr Ser Arg Gly Asp Leu Ala Thr Cys Pro
50 55 60

Arg Gly Phe Ala Val Thr Gly Cys Thr Cys Gly Ser Ala Cys Gly Ser
65 70 75 80

Trp Asp Val Arg Ala Glu Thr Thr Cys His Cys Gln Cys Ala Gly Met
85 90 95

Asp Trp Thr Gly Ala Arg Cys Cys Arg Val Gln Pro
100 105

<210> 250
<211> 114
<212> PRT
<213> Mus musculus

<400> 250

Met Lys Asn Leu Ser Phe Pro Leu Leu Phe Leu Phe Phe Leu Val Pro
1 5 10 15

Glu Leu Leu Gly Ser Ser Met Pro Leu Cys Pro Ile Asp Glu Ala Ile
20 25 30

Asp Lys Lys Ile Lys Gln Asp Phe Asn Ser Leu Phe Pro Asn Ala Ile
35 40 45

Lys Asn Ile Gly Leu Asn Cys Trp Thr Val Ser Ser Arg Gly Lys Leu
50 55 60

Ala Ser Cys Pro Glu Gly Thr Ala Val Leu Ser Cys Ser Cys Gly Ser
65 70 75 80

Ala Cys Gly Ser Trp Asp Ile Arg Glu Glu Lys Val Cys His Cys Gln
85 90 95

Cys Ala Arg Ile Asp Trp Thr Ala Ala Arg Cys Cys Lys Leu Gln Val
100 105 110

Ala Ser

<210> 251
<211> 174
<212> PRT
<213> Homo sapiens

<400> 251

Gln Asp Gln Gly Gly Leu Val Thr Glu Thr Ala Asp Pro Gly Ala Gln
1 5 10 15

Ala Gln Gln Gly Leu Gly Phe Gln Lys Leu Pro Glu Glu Glu Pro Glu
20 25 30

Thr Asp Leu Ser Pro Gly Leu Pro Ala Ala His Leu Ile Gly Ala Pro
35 40 45

Leu Lys Gly Gln Gly Leu Gly Trp Glu Thr Thr Lys Glu Gln Ala Phe
50 55 60

Leu Thr Ser Gly Thr Gln Phe Ser Asp Ala Glu Gly Leu Ala Leu Pro
65 70 75 80

Gln Asp Gly Leu Tyr Tyr Leu Tyr Cys Leu Val Gly Tyr Arg Gly Arg
85 90 95

Ala Pro Pro Gly Gly Gly Asp Pro Gln Gly Arg Ser Val Thr Leu Arg
100 105 110

Ser Ser Leu Tyr Arg Ala Gly Gly Ala Tyr Gly Pro Gly Thr Pro Glu
115 120 125

Leu Leu Leu Glu Gly Ala Glu Thr Val Thr Pro Val Leu Asp Pro Ala
130 135 140

Arg Arg Gln Gly Tyr Gly Pro Leu Trp Tyr Thr Ser Val Gly Phe Gly
145 150 155 160

Gly Leu Val Gln Leu Arg Arg Gly Glu Arg Val Tyr Val Asn
165 170

<210> 252
<211> 258
<212> PRT
<213> Mus musculus

<400> 252

Gln Asp Gln Gly Arg Arg Val Glu Lys Ile Ile Gly Ser Gly Ala Gln

1	5	10	15
Ala Gln Lys Arg Leu Asp Asp Ser Lys Pro Ser Cys Ile Leu Pro Ser	20	25	30
Pro Ser Ser Leu Ser Glu Thr Pro Asp Pro Arg Leu His Pro Gln Arg	35	40	45
Ser Asn Ala Ser Arg Asn Leu Ala Ser Thr Ser Gln Gly Pro Val Ala	50	55	60
Gln Ser Ser Arg Glu Ala Ser Ala Trp Met Thr Ile Leu Ser Pro Ala	65	70	75
Ala Asp Ser Thr Pro Asp Pro Gly Val Gln Gln Leu Pro Lys Gly Glu	85	90	95
Pro Glu Thr Asp Leu Asn Pro Glu Leu Pro Ala Ala His Leu Ile Gly	100	105	110
Ala Trp Met Ser Gly Gln Gly Leu Ser Trp Glu Ala Ser Gln Glu Glu	115	120	125
Ala Phe Leu Arg Ser Gly Ala Gln Phe Ser Pro Thr His Gly Leu Ala	130	135	140
Leu Pro Gln Asp Gly Val Tyr Tyr Leu Tyr Cys His Val Gly Tyr Arg	145	150	155
Gly Arg Thr Pro Pro Ala Gly Arg Ser Arg Ala Arg Ser Leu Thr Leu	165	170	175
Arg Ser Ala Leu Tyr Arg Ala Gly Gly Ala Tyr Gly Arg Gly Ser Pro	180	185	190
Glu Leu Leu Leu Glu Gly Ala Glu Thr Val Thr Pro Val Val Asp Pro	195	200	205
Ile Gly Tyr Gly Ser Leu Trp Tyr Thr Ser Val Gly Phe Gly Gly Leu	210	215	220
Ala Gln Leu Arg Ser Gly Glu Arg Val Tyr Val Asn Ile Ser His Pro	225	230	235
Asp Met Val Asp Tyr Arg Arg Gly Lys Thr Phe Phe Gly Ala Val Met	245	250	255

Val Gly

<210> 253
 <211> 128
 <212> PRT
 <213> RNA-phage PP7

<400> 253

Met Ser Lys Thr Ile Val Leu Ser Val Gly Glu Ala Thr Arg Thr Leu
 1 5 10 15

Thr Glu Ile Gln Ser Thr Ala Asp Arg Gln Ile Phe Glu Glu Lys Val
 20 25 30

Gly Pro Leu Val Gly Arg Leu Arg Leu Thr Ala Ser Leu Arg Gln Asn
 35 40 45

Gly Ala Lys Thr Ala Tyr Arg Val Asn Leu Lys Leu Asp Gln Ala Asp
 50 55 60

Val Val Asp Cys Ser Thr Ser Val Cys Gly Glu Leu Pro Lys Val Arg
 65 70 75 80

Tyr Thr Gln Val Trp Ser His Asp Val Thr Ile Val Ala Asn Ser Thr
 85 90 95

Glu Ala Ser Arg Lys Ser Leu Tyr Asp Leu Thr Lys Ser Leu Val Ala
 100 105 110

Thr Ser Gln Val Glu Asp Leu Val Val Asn Leu Val Pro Leu Gly Arg
 115 120 125

<210> 254
 <211> 330
 <212> PRT
 <213> RNA-phage SP A1 protein

<400> 254

Ala Lys Leu Asn Gln Val Thr Leu Ser Lys Ile Gly Lys Asn Gly Asp
 1 5 10 15

Gln Thr Leu Thr Leu Thr Pro Arg Gly Val Asn Pro Thr Asn Gly Val
 20 25 30

Ala Ser Leu Ser Glu Ala Gly Ala Val Pro Ala Leu Glu Lys Arg Val
 35 40 45

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Thr	Val	Ser	Val	Ala	Gln	Pro	Ser	Arg	Asn	Arg	Lys	Asn	Phe	Lys	Val
50						55					60				
Gln	Ile	Lys	Leu	Gln	Asn	Pro	Thr	Ala	Cys	Thr	Arg	Asp	Ala	Cys	Asp
65					70					75					80
Pro	Ser	Val	Thr	Arg	Ser	Ala	Phe	Ala	Asp	Val	Thr	Leu	Ser	Phe	Thr
				85					90					95	
Ser	Tyr	Ser	Thr	Asp	Glu	Glu	Arg	Ala	Leu	Ile	Arg	Thr	Glu	Leu	Ala
			100					105					110		
Ala	Leu	Leu	Ala	Asp	Pro	Leu	Ile	Val	Asp	Ala	Ile	Asp	Asn	Leu	Asn
		115					120					125			
Pro	Ala	Tyr	Trp	Ala	Ala	Leu	Leu	Val	Ala	Ser	Ser	Gly	Gly	Gly	Asp
	130					135						140			
Asn	Pro	Ser	Asp	Pro	Asp	Val	Pro	Val	Val	Pro	Asp	Val	Lys	Pro	Pro
145					150					155					160
Asp	Gly	Thr	Gly	Arg	Tyr	Lys	Cys	Pro	Phe	Ala	Cys	Tyr	Arg	Leu	Gly
				165					170					175	
Ser	Ile	Tyr	Glu	Val	Gly	Lys	Glu	Gly	Ser	Pro	Asp	Ile	Tyr	Glu	Arg
			180					185					190		
Gly	Asp	Glu	Val	Ser	Val	Thr	Phe	Asp	Tyr	Ala	Leu	Glu	Asp	Phe	Leu
		195					200					205			
Gly	Asn	Thr	Asn	Trp	Arg	Asn	Trp	Asp	Gln	Arg	Leu	Ser	Asp	Tyr	Asp
	210					215					220				
Ile	Ala	Asn	Arg	Arg	Arg	Cys	Arg	Gly	Asn	Gly	Tyr	Ile	Asp	Leu	Asp
225					230					235					240
Ala	Thr	Ala	Met	Gln	Ser	Asp	Asp	Phe	Val	Leu	Ser	Gly	Arg	Tyr	Gly
				245					250					255	
Val	Arg	Lys	Val	Lys	Phe	Pro	Gly	Ala	Phe	Gly	Ser	Ile	Lys	Tyr	Leu
			260					265					270		
Leu	Asn	Ile	Gln	Gly	Asp	Ala	Trp	Leu	Asp	Leu	Ser	Glu	Val	Thr	Ala
		275					280					285			
Tyr	Arg	Ser	Tyr	Gly	Met	Val	Ile	Gly	Phe	Trp	Thr	Asp	Ser	Lys	Ser
	290					295					300				

Pro Gln Leu Pro Thr Asp Phe Thr Gln Phe Asn Ser Ala Asn Cys Pro
305 310 315 320

Val Gln Thr Val Ile Ile Ile Pro Ser Leu
325 330

<210> 255
<211> 132
<212> PRT
<213> QB 240

<400> 255

Ala Lys Leu Glu Thr Val Thr Leu Gly Asn Ile Gly Arg Asp Gly Lys
1 5 10 15

Gln Thr Leu Val Leu Asn Pro Arg Gly Val Asn Pro Thr Asn Gly Val
20 25 30

Ala Ser Leu Ser Gln Ala Gly Ala Val Pro Ala Leu Glu Lys Arg Val
35 40 45

Thr Val Ser Val Ser Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys Val
50 55 60

Gln Val Lys Ile Gln Asn Pro Thr Ala Cys Thr Ala Asn Gly Ser Cys
65 70 75 80

Asp Pro Ser Val Thr Arg Gln Lys Tyr Ala Asp Val Thr Phe Ser Phe
85 90 95

Thr Gln Tyr Ser Thr Asp Glu Glu Arg Ala Phe Val Arg Thr Glu Leu
100 105 110

Ala Ala Leu Leu Ala Ser Pro Leu Leu Ile Asp Ala Ile Asp Gln Leu
115 120 125

Asn Pro Ala Tyr
130

<210> 256
<211> 132
<212> PRT
<213> Qb 243

<400> 256

Ala Lys Leu Glu Thr Val Thr Leu Gly Lys Ile Gly Lys Asp Gly Lys
1 5 10 15

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Gln Thr Leu Val Leu Asn Pro Arg Gly Val Asn Pro Thr Asn Gly Val
20 25 30

Ala Ser Leu Ser Gln Ala Gly Ala Val Pro Ala Leu Glu Lys Arg Val
35 40 45

Thr Val Ser Val Ser Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys Val
50 55 60

Gln Val Lys Ile Gln Asn Pro Thr Ala Cys Thr Ala Asn Gly Ser Cys
65 70 75 80

Asp Pro Ser Val Thr Arg Gln Lys Tyr Ala Asp Val Thr Phe Ser Phe
85 90 95

Thr Gln Tyr Ser Thr Asp Glu Glu Arg Ala Phe Val Arg Thr Glu Leu
100 105 110

Ala Ala Leu Leu Ala Ser Pro Leu Leu Ile Asp Ala Ile Asp Gln Leu
115 120 125

Asn Pro Ala Tyr
130

<210> 257
<211> 132
<212> PRT
<213> Qb 250

<400> 257

Ala Arg Leu Glu Thr Val Thr Leu Gly Asn Ile Gly Arg Asp Gly Lys
1 5 10 15

Gln Thr Leu Val Leu Asn Pro Arg Gly Val Asn Pro Thr Asn Gly Val
20 25 30

Ala Ser Leu Ser Gln Ala Gly Ala Val Pro Ala Leu Glu Lys Arg Val
35 40 45

Thr Val Ser Val Ser Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys Val
50 55 60

Gln Val Lys Ile Gln Asn Pro Thr Ala Cys Thr Ala Asn Gly Ser Cys
65 70 75 80

Asp Pro Ser Val Thr Arg Gln Lys Tyr Ala Asp Val Thr Phe Ser Phe
85 90 95

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Thr Gln Tyr Ser Thr Asp Glu Glu Arg Ala Phe Val Arg Thr Glu Leu
100 105 110

Ala Ala Leu Leu Ala Ser Pro Leu Leu Ile Asp Ala Ile Asp Gln Leu
115 120 125

Asn Pro Ala Tyr
130

<210> 258
<211> 132
<212> PRT
<213> Qb 259

<400> 258

Ala Arg Leu Glu Thr Val Thr Leu Gly Asn Ile Gly Lys Asp Gly Arg
1 5 10 15

Gln Thr Leu Val Leu Asn Pro Arg Gly Val Asn Pro Thr Asn Gly Val
20 25 30

Ala Ser Leu Ser Gln Ala Gly Ala Val Pro Ala Leu Glu Lys Arg Val
35 40 45

Thr Val Ser Val Ser Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys Val
50 55 60

Gln Val Lys Ile Gln Asn Pro Thr Ala Cys Thr Ala Asn Gly Ser Cys
65 70 75 80

Asp Pro Ser Val Thr Arg Gln Lys Tyr Ala Asp Val Thr Phe Ser Phe
85 90 95

Thr Gln Tyr Ser Thr Asp Glu Glu Arg Ala Phe Val Arg Thr Glu Leu
100 105 110

Ala Ala Leu Leu Ala Ser Pro Leu Leu Ile Asp Ala Ile Asp Gln Leu
115 120 125

Asn Pro Ala Tyr
130

<210> 259
<211> 132
<212> PRT
<213> Qb 251

<400> 259

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Ala Lys Leu Glu Thr Val Thr Leu Gly Asn Ile Gly Lys Asp Gly Arg
1 5 10 15

Gln Thr Leu Val Leu Asn Pro Arg Gly Val Asn Pro Thr Asn Gly Val
20 25 30

Ala Ser Leu Ser Gln Ala Gly Ala Val Pro Ala Leu Glu Lys Arg Val
35 40 45

Thr Val Ser Val Ser Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys Val
50 55 60

Gln Val Lys Ile Gln Asn Pro Thr Ala Cys Thr Ala Asn Gly Ser Cys
65 70 75 80

Asp Pro Ser Val Thr Arg Gln Lys Tyr Ala Asp Val Thr Phe Ser Phe
85 90 95

Thr Gln Tyr Ser Thr Asp Glu Glu Arg Ala Phe Val Arg Thr Glu Leu
100 105 110

Ala Ala Leu Leu Ala Ser Pro Leu Leu Ile Asp Ala Ile Asp Gln Leu
115 120 125

Asn Pro Ala Tyr
130

<210> 260
<211> 20
<212> DNA
<213> PH19

<400> 260
taagtcctct gccacgtacc 20

<210> 261
<211> 20
<212> DNA
<213> PH20

<400> 261
tggaaccac gtcacttcc 20

<210> 262
<211> 30
<212> DNA
<213> PH21

<400> 262
cgggatccgg gatgaagaac ctttcatttc 30

<210> 263	
<211> 31	
<212> DNA	
<213> PH22	
<400> 263	
gcctctagag aggaagcgac ctgcagctta c	31
<210> 264	
<211> 46	
<212> DNA	
<213> PH29	
<400> 264	
ctagcgggag ggggtggatg tggggacgac tacaaggatg acgaca	46
<210> 265	
<211> 46	
<212> DNA	
<213> PH30	
<400> 265	
agcttgtcgt catccttgta gtcgtcccca catccacccc ctccccg	46
<210> 266	
<211> 45	
<212> DNA	
<213> PH31	
<400> 266	
agcttactca cacatgccca ccgtgcccag cacctgaagc cgagg	45
<210> 267	
<211> 38	
<212> DNA	
<213> PH32	
<400> 267	
cggcttcagg tgctgggcac ggtgggcatg tgtgagta	38
<210> 268	
<211> 37	
<212> DNA	
<213> PH35	
<400> 268	
ctagcgggag ggggtggatg tgggatcgaa ggtcgca	37
<210> 269	
<211> 37	
<212> DNA	
<213> PH36	
<400> 269	
agcttgcgac cttcgatccc acatccacccc cctccccg	37

<210> 270
<211> 43
<212> DNA
<213> PH37

<400> 270
cgggatccag cagctgggct cgaggtgcta gctttgttta aac 43

<210> 271
<211> 55
<212> DNA
<213> PH38

<400> 271
gatcgtttta acaaacaag ctagcacctc gagcccagct gctggatccc ggtac 55

<210> 272
<211> 37
<212> DNA
<213> PH39

<400> 272
ctagcgggag ggggtggatg tggggacgat gacgaca 37

<210> 273
<211> 37
<212> DNA
<213> PH40

<400> 273
agcttgtcgt catcgcccc acatccaccc cctcccg 37

<210> 274
<211> 30
<212> DNA
<213> PH41

<400> 274
catggagaca gacacactcc tgctatgggt 30

<210> 275
<211> 39
<212> DNA
<213> PH42

<400> 275
gcagtaccca tagcaggagt gtgtctgtct ccatgggtac 39

<210> 276
<211> 37
<212> DNA
<213> PH43

<400> 276
actgtgtctc tgggttccag gttccactgg tgacgcg 37

<210> 277
 <211> 36
 <212> DNA
 <213> PH44

<400> 277
 gatccgcgctc accagtggaa cctggaaccc agagca 36

<210> 278
 <211> 40
 <212> DNA
 <213> SU7

<400> 278
 agcttgccgga tccaggatat cggctcgagg ttctagagtg 40

<210> 279
 <211> 40
 <212> DNA
 <213> SU8

<400> 279
 ggcccactct agaacctcga gccgatatcc tggatccgca 40

<210> 280
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Resistin-C-Xa construct

<400> 280

Ser Ser Met Pro Leu Cys Pro Ile Asp Glu Ala Ile Asp Lys Lys Ile
 1 5 10 15

Lys Gln Asp Phe Asn Ser Leu Phe Pro Asn Ala Ile Lys Asn Ile Gly
 20 25 30

Leu Asn Cys Trp Thr Val Ser Ser Arg Gly Lys Leu Ala Ser Cys Pro
 35 40 45

Glu Gly Thr Ala Val Leu Ser Cys Ser Cys Gly Ser Ala Cys Gly Ser
 50 55 60

Trp Asp Ile Arg Glu Glu Lys Val Cys His Cys Gln Cys Ala Arg Ile
 65 70 75 80

Asp Trp Thr Ala Ala Arg Cys Cys Lys Leu Gln Val Ala Ser Ser Leu
 85 90 95

Ala Gly Gly Gly Gly Cys Gly Ile Glu Gly Arg

100

105

<210> 281
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Resistin-C-EK construct

<400> 281

Ser Ser Met Pro Leu Cys Pro Ile Asp Glu Ala Ile Asp Lys Lys Ile
1 5 10 15

Lys Gln Asp Phe Asn Ser Leu Phe Pro Asn Ala Ile Lys Asn Ile Gly
20 25 30

Leu Asn Cys Trp Thr Val Ser Ser Arg Gly Lys Leu Ala Ser Cys Pro
35 40 45

Glu Gly Thr Ala Val Leu Ser Cys Ser Cys Gly Ser Ala Cys Gly Ser
50 55 60

Trp Asp Ile Arg Glu Glu Lys Val Cys His Cys Gln Cys Ala Arg Ile
65 70 75 80

Asp Trp Thr Ala Ala Arg Cys Cys Lys Leu Gln Val Ala Ser Ser Leu
85 90 95

Ala Gly Gly Gly Gly Cys Gly Asp Asp Asp Asp
100 105

<210> 282
<211> 103
<212> PRT
<213> Artificial Sequence

<220>
<223> Resistin-GCG construct

<400> 282

Ser Ser Met Pro Leu Cys Pro Ile Asp Glu Ala Ile Asp Lys Lys Ile
1 5 10 15

Lys Gln Asp Phe Asn Ser Leu Phe Pro Asn Ala Ile Lys Asn Ile Gly
20 25 30

Leu Asn Cys Trp Thr Val Ser Ser Arg Gly Lys Leu Ala Ser Cys Pro
35 40 45

Glu Gly Thr Ala Val Leu Ser Cys Ser Cys Gly Ser Ala Cys Gly Ser
50 55 60

Trp Asp Ile Arg Glu Glu Lys Val Cys His Cys Gln Cys Ala Arg Ile
65 70 75 80

Asp Trp Thr Ala Ala Arg Cys Cys Lys Leu Gln Val Ala Ser Ser Leu
85 90 95

Ala Gly Gly Gly Gly Cys Gly
100

<210> 283
<211> 10285
<212> DNA
<213> Artificial Sequence

<220>
<223> pCep Xa Fc construct

<220>
<221> misc_feature
<222> (9872)..(9872)
<223> n is a, c, g, or t

<400> 283
gccccgccgc cggacgaact aaacctgact acggcatctc tgccccttct tcgctggtac 60
gaggagcgct tttgttttgt attcggggca gtgcatgtaa tcccttcagt tggttggtac 120
aacttgccaa ctgggccctg ttccacatgt gacacggggg gggaccaaac acaaaggggt 180
tctctgactg tagttgacat ccttataaat ggatgtgcac atttgccaac actgagtggc 240
tttcatcctg gagcagactt tgcattgctgt ggactgcaac acaacattgc ctttatgtgt 300
aactcttggc tgaagctctt acaccaatgc tgggggacat gtacctcca ggggccagg 360
aagactacgg gaggctacac caacgtcaat cagagggggc tgtgtagcta ccgataagcg 420
gacctcaag agggcattag caatagtgtt tataaggccc cttgtttaac cctaaacggg 480
tagcatatgc ttcccggtgta gtagtatata ctatccagac taaccctaatt tcaatagcat 540
atgttaccga acgggaagca tatgctatcg aattaggggt agtaaaaggg tcctaaggaa 600
cagcgatatc tcccaccca tgagctgtca cggttttatt tacatggggg caggattcca 660
cgagggtagt gaaccatttt agtcacaagg gcagtggctg aagatcaagg agcgggcagt 720
gaactctcct gaatcttcgc ctgcttcttc attctccttc gtttagctaa tagaataact 780
gctgagttgt gaacagtaag gtgtatgtga ggtgctcgaa aacaagggtt cagggtgacgc 840
ccccagaata aaatttgac ggggggttca gtgggtggcat tgtgctatga caccaatata 900
accctcacia accccttggg caataaatac tagttagga atgaaacatt ctgaatatct 960

ttaacaatag aaatccatgg ggtggggaca agccgtaaag actggatgtc catctcacac	1020
gaatttatgg ctatgggcaa cacataatcc tagtgcaata tgatactggg gttattaaga	1080
tgtgtcccag gcagggacca agacaggtga accatgttgt tacactctat ttgtaacaag	1140
gggaaagaga gtggacgccg acagcagcgg actccactgg ttgtctctaa ccccccgaa	1200
aattaaacgg ggctccacgc caatggggcc cataaacaaa gacaagtggc cactcttttt	1260
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Glu Glu His Leu Tyr Glu Arg Asp Glu Gly Asp Lys Trp Arg Asn Lys
35 40 45

Lys Phe Glu Leu Gly Leu Glu Phe Pro Asn Leu Pro Tyr Tyr Ile Asp
50 55 60

Gly Asp Val Lys Leu Thr Gln Ser Met Ala Ile Ile Arg Tyr Ile Ala
65 70 75 80

Asp Lys His Asn Met Leu Gly Gly Cys Pro Lys Glu Arg Ala Glu Ile
85 90 95

Ser Met Leu Glu Gly Ala Val Leu Asp Ile Arg Tyr Gly Val Ser Arg
100 105 110

Ile Ala Tyr Ser Lys Asp Phe Glu Thr Leu Lys Val Asp Phe Leu Ser
115 120 125

Lys Leu Pro Glu Met Leu Lys Met Phe Glu Asp Arg Leu Cys His Lys
130 135 140

Thr Tyr Leu Asn Gly Asp His Val Thr His Pro Asp Phe Met Leu Tyr
145 150 155 160

Asp Ala Leu Asp Val Val Leu Tyr Met Asp Pro Met Cys Leu Asp Ala
165 170 175

Phe Pro Lys Leu Val Cys Phe Lys Lys Arg Ile Glu Ala Ile Pro Gln
180 185 190

Ile Asp Lys Tyr Leu Lys Ser Ser Lys Tyr Ile Ala Trp Pro Leu Gln
195 200 205

Gly Trp Gln Ala Thr Phe Gly Gly Gly Asp His Pro Pro Lys Ala Ser
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 Met Thr Gly Gly Gln Gln Met Gly Arg Asp Leu Tyr Asp Asp Asp Asp
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 Lys Leu Ala Cys Gly Gly Gln Asp Gln Gly Arg Arg Val Glu Lys Ile
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 305 310 315 320
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 325 330 335
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 355 360 365
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 Cys His Val Gly Tyr Arg Gly Arg Thr Pro Pro Ala Gly Arg Ser Arg
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 Tyr Gly Arg Gly Ser Pro Glu Leu Leu Leu Glu Gly Ala Glu Thr Val
 435 440 445
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Val Gly Phe Gly Gly Leu Ala Gln Leu Arg Ser Gly Glu Arg Val Tyr
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Glu Glu His Leu Tyr Glu Arg Asp Glu Gly Asp Lys Trp Arg Asn Lys
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Lys Phe Glu Leu Gly Leu Glu Phe Pro Asn Leu Pro Tyr Tyr Ile Asp
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Gly Asp Val Lys Leu Thr Gln Ser Met Ala Ile Ile Arg Tyr Ile Ala
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Asp Lys His Asn Met Leu Gly Gly Cys Pro Lys Glu Arg Ala Glu Ile
85 90 95

Ser Met Leu Glu Gly Ala Val Leu Asp Ile Arg Tyr Gly Val Ser Arg
100 105 110

Ile Ala Tyr Ser Lys Asp Phe Glu Thr Leu Lys Val Asp Phe Leu Ser
115 120 125

Lys Leu Pro Glu Met Leu Lys Met Phe Glu Asp Arg Leu Cys His Lys
130 135 140

Thr Tyr Leu Asn Gly Asp His Val Thr His Pro Asp Phe Met Leu Tyr
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Asp Ala Leu Asp Val Val Leu Tyr Met Asp Pro Met Cys Leu Asp Ala
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 Ile Asp Lys Tyr Leu Lys Ser Ser Lys Tyr Ile Ala Trp Pro Leu Gln
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 Gly Val Gln Gln Leu Pro Lys Gly Glu Pro Glu Thr Asp Leu Asn Pro
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Thr Gly Gly Gln Gln Met Gly Arg Asp Leu Tyr Asp Asp Asp Asp Lys
35 40 45

Leu Ala Cys Gly Gly Gln Asp Gln Gly Arg Arg Val Glu Lys Ile Ile
50 55 60

Gly Ser Gly Ala Gln Ala Gln Lys Arg Leu Asp Asp Ser Lys Pro Ser
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Cys Ile Leu Pro Ser Pro Ser Ser Leu Ser Glu Thr Pro Asp Pro Arg
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Leu His Pro Gln Arg Ser Asn Ala Ser Arg Asn Leu Ala Ser Thr Ser
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Gln Gly Pro Val Ala Gln Ser Ser Arg Glu Ala Ser Ala Trp Met Thr
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Ile Leu Ser Pro Ala Ala Asp Ser Thr Pro Asp Pro Gly Val Gln Gln
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Leu Pro Lys Gly Glu Pro Glu Thr Asp Leu Asn Pro Glu Leu Pro Ala
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Ala His Leu Ile Gly Ala Trp Met Ser Gly Gln Gly Leu Ser Trp Glu
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Ala Ser Gln Glu Glu Ala Phe Leu Arg Ser Gly Ala Gln Phe Ser Pro
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-161-

Thr His Gly Leu Ala Leu Pro Gln Asp Gly Val Tyr Tyr Leu Tyr Cys
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His Val Gly Tyr Arg Gly Arg Thr Pro Pro Ala Gly Arg Ser Arg Ala
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Arg Ser Leu Thr Leu Arg Ser Ala Leu Tyr Arg Ala Gly Gly Ala Tyr
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Gly Arg Gly Ser Pro Glu Leu Leu Leu Glu Gly Ala Glu Thr Val Thr
245 250 255

Pro Val Val Asp Pro Ile Gly Tyr Gly Ser Leu Trp Tyr Thr Ser Val
260 265 270

Gly Phe Gly Gly Leu Ala Gln Leu Arg Ser Gly Glu Arg Val Tyr Val
275 280 285

Asn Ile Ser His Pro Asp Met Val Asp Tyr Arg Arg Gly Lys Thr Phe
290 295 300

Phe Gly Ala Val Met Val Gly
305 310

<210> 292

<211> 234

<212> PRT

<213> Artificial Sequence

<220>

<223> his-myc-EK-C-LT_126-306 fusion protein

<400> 292

Ala Pro Leu Val His His His His His His Gly Pro Leu Val Asp Val
1 5 10 15

Ala Ser Asn Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Ala Ser Met
20 25 30

Thr Gly Gly Gln Gln Met Gly Arg Asp Leu Tyr Asp Asp Asp Asp Lys
35 40 45

Leu Ala Cys Gly Gly Ser Pro Ala Ala Asp Ser Thr Pro Asp Pro Gly
50 55 60

Val Gln Gln Leu Pro Lys Gly Glu Pro Glu Thr Asp Leu Asn Pro Glu
65 70 75 80

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Leu Pro Ala Ala His Leu Ile Gly Ala Trp Met Ser Gly Gln Gly Leu
85 90 95

Ser Trp Glu Ala Ser Gln Glu Glu Ala Phe Leu Arg Ser Gly Ala Gln
100 105 110

Phe Ser Pro Thr His Gly Leu Ala Leu Pro Gln Asp Gly Val Tyr Tyr
115 120 125

Leu Tyr Cys His Val Gly Tyr Arg Gly Arg Thr Pro Pro Ala Gly Arg
130 135 140

Ser Arg Ala Arg Ser Leu Thr Leu Arg Ser Ala Leu Tyr Arg Ala Gly
145 150 155 160

Gly Ala Tyr Gly Arg Gly Ser Pro Glu Leu Leu Leu Glu Gly Ala Glu
165 170 175

Thr Val Thr Pro Val Val Asp Pro Ile Gly Tyr Gly Ser Leu Trp Tyr
180 185 190

Thr Ser Val Gly Phe Gly Gly Leu Ala Gln Leu Arg Ser Gly Glu Arg
195 200 205

Val Tyr Val Asn Ile Ser His Pro Asp Met Val Asp Tyr Arg Arg Gly
210 215 220

Lys Thr Phe Phe Gly Ala Val Met Val Gly
225 230

<210> 293
<211> 43
<212> DNA
<213> Artificial Sequence

<220>
<223> MCS-1F primer

<400> 293
tatggatccg gctagcgctc gagggtttaa acggcgcccg cat

43

<210> 294
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> MCS-1R primer

<400> 294
tcgaatgcgg ccgccgttta aaccctcgag cgctagccgg atcca

45

<210> 295
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Bamhis6-EK-Nhe-F oligonucleotide

<400> 295
gatccacacc accaccacca ccacggttct ggtgacgacg atgacaaagc gctagccc 58

<210> 296
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Bamhis6-EK-Nhe-R oligonucleotide

<400> 296
tcgagggcta gcgctttgtc atcgtcgtca ccagaaccgt ggtggtggtg gtggtgtg 58

<210> 297
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> oligo1F-C-glycine-linker

<400> 297
tcgagggtgg tgggtggtgg tgcggttaat aagtttaaac gc 42

<210> 298
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> oligo1R-C-glycine-linker

<400> 298
ggccgcgttt aaacttatta accgcaacca ccaccaccac cc 42

<210> 299
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> oligo1F-C-gamma1-linker

<400> 299
tcgaggataa aaccacacc tctccgccgt gtggttaata agtttaaacg c 51

<210> 300

<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> oligo1R-C-gamma1-linker

<400> 300
ggccgcggtt aaacttatta accacacggc ggagaggtgt gggttttatc c 51

<210> 301
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> oligo1FA-C-gamma3-linker

<400> 301
tcgagccgaa accgtctacc ccgccgggtt cttctg 36

<210> 302
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> oligo1RA-C-gamma3-linker

<400> 302
caccaccaga agaaccggc ggggtagacg gtttcggc 38

<210> 303
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> oligo2FB-C-gamma3-linker

<400> 303
gtggtgctcc ggggtggttc ggttaataag tttaaacgc 39

<210> 304
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> oligo2RB-C-gamma3-linker

<400> 304
ggccgcggtt aaacttatta accgcaacca cccggag 37

<210> 305
<211> 33
<212> DNA

<213> Artificial Sequence

<220>

<223> rMIF-F oligonucleotide

<400> 305

ggaattccat atgcctatgt tcatcgtgaa cac

33

<210> 306

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> rMIF-Xho-R oligonucleotide

<400> 306

cccgcctcgag agcgaaggtg gaaccgttc

29

<210> 307

<211> 124

<212> PRT

<213> Artificial Sequence

<220>

<223> rMIF-C1

<400> 307

Met Pro Met Phe Ile Val Asn Thr Asn Val Pro Arg Ala Ser Val Pro
1 5 10 15

Glu Gly Phe Leu Ser Glu Leu Thr Gln Gln Leu Ala Gln Ala Thr Gly
20 25 30

Lys Pro Ala Gln Tyr Ile Ala Val His Val Val Pro Asp Gln Leu Met
35 40 45

Thr Phe Ser Gly Thr Ser Asp Pro Cys Ala Leu Cys Ser Leu His Ser
50 55 60

Ile Gly Lys Ile Gly Gly Ala Gln Asn Arg Asn Tyr Ser Lys Leu Leu
65 70 75 80

Cys Gly Leu Leu Ser Asp Arg Leu His Ile Ser Pro Asp Arg Val Tyr
85 90 95

Ile Asn Tyr Tyr Asp Met Asn Ala Ala Asn Val Gly Trp Asn Gly Ser
100 105 110

Thr Phe Ala Leu Glu Gly Gly Gly Gly Gly Cys Gly
115 120

<210> 308
<211> 127
<212> PRT
<213> Artificial Sequence

<220>
<223> rMIF-C2

<400> 308

Met Pro Met Phe Ile Val Asn Thr Asn Val Pro Arg Ala Ser Val Pro
1 5 10 15

Glu Gly Phe Leu Ser Glu Leu Thr Gln Gln Leu Ala Gln Ala Thr Gly
20 25 30

Lys Pro Ala Gln Tyr Ile Ala Val His Val Val Pro Asp Gln Leu Met
35 40 45

Thr Phe Ser Gly Thr Ser Asp Pro Cys Ala Leu Cys Ser Leu His Ser
50 55 60

Ile Gly Lys Ile Gly Gly Ala Gln Asn Arg Asn Tyr Ser Lys Leu Leu
65 70 75 80

Cys Gly Leu Leu Ser Asp Arg Leu His Ile Ser Pro Asp Arg Val Tyr
85 90 95

Ile Asn Tyr Tyr Asp Met Asn Ala Ala Asn Val Gly Trp Asn Gly Ser
100 105 110

Thr Phe Ala Leu Glu Asp Lys Thr His Thr Ser Pro Pro Cys Gly
115 120 125

<210> 309
<211> 135
<212> PRT
<213> Artificial Sequence

<220>
<223> rMIF-C3

<400> 309

Met Pro Met Phe Ile Val Asn Thr Asn Val Pro Arg Ala Ser Val Pro
1 5 10 15

Glu Gly Phe Leu Ser Glu Leu Thr Gln Gln Leu Ala Gln Ala Thr Gly
20 25 30

Lys Pro Ala Gln Tyr Ile Ala Val His Val Val Pro Asp Gln Leu Met
35 40 45

Thr Phe Ser Gly Thr Ser Asp Pro Cys Ala Leu Cys Ser Leu His Ser
50 55 60

Ile Gly Lys Ile Gly Gly Ala Gln Asn Arg Asn Tyr Ser Lys Leu Leu
65 70 75 80

Cys Gly Leu Leu Ser Asp Arg Leu His Ile Ser Pro Asp Arg Val Tyr
85 90 95

Ile Asn Tyr Tyr Asp Met Asn Ala Ala Asn Val Gly Trp Asn Gly Ser
100 105 110

Thr Phe Ala Leu Glu Pro Lys Pro Ser Thr Pro Pro Gly Ser Ser Gly
115 120 125

Gly Ala Pro Gly Gly Cys Gly
130 135

<210> 310
<211> 124
<212> PRT
<213> Homo sapiens

<400> 310

Met Pro Met Phe Ile Val Asn Thr Asn Val Pro Arg Ala Ser Val Pro
1 5 10 15

Asp Gly Phe Leu Ser Glu Leu Thr Gln Gln Leu Ala Gln Ala Thr Gly
20 25 30

Lys Pro Pro Gln Tyr Ile Ala Val His Val Val Pro Asp Gln Leu Met
35 40 45

Ala Phe Gly Gly Ser Ser Glu Pro Cys Ala Leu Cys Ser Leu His Ser
50 55 60

Ile Gly Lys Ile Gly Gly Ala Gln Asn Arg Ser Tyr Ser Lys Leu Leu
65 70 75 80

Cys Gly Leu Leu Ala Glu Arg Leu Arg Ile Ser Pro Asp Arg Val Tyr
85 90 95

Ile Asn Tyr Tyr Asp Met Asn Ala Ala Asn Val Gly Trp Asn Asn Ser
100 105 110

Thr Phe Ala Leu Glu Gly Gly Gly Gly Gly Cys Gly
115 120

<210> 311
<211> 123
<212> PRT
<213> Homo sapiens

<400> 311

Pro Met Phe Ile Val Asn Thr Asn Val Pro Arg Ala Ser Val Pro Asp
1 5 10 15

Gly Phe Leu Ser Glu Leu Thr Gln Gln Leu Ala Gln Ala Thr Gly Lys
20 25 30

Pro Pro Gln Tyr Ile Ala Val His Val Val Pro Asp Gln Leu Met Ala
35 40 45

Phe Gly Gly Ser Ser Glu Pro Cys Ala Leu Cys Ser Leu His Ser Ile
50 55 60

Gly Lys Ile Gly Gly Ala Gln Asn Arg Ser Tyr Ser Lys Leu Leu Cys
65 70 75 80

Gly Leu Leu Ala Glu Arg Leu Arg Ile Ser Pro Asp Arg Val Tyr Ile
85 90 95

Asn Tyr Tyr Asp Met Asn Ala Ala Asn Val Gly Trp Asn Asn Ser Thr
100 105 110

Phe Ala Leu Glu Gly Gly Gly Gly Gly Cys Gly
115 120

<210> 312
<211> 127
<212> PRT
<213> Homo sapiens

<400> 312

Met Pro Met Phe Ile Val Asn Thr Asn Val Pro Arg Ala Ser Val Pro
1 5 10 15

Asp Gly Phe Leu Ser Glu Leu Thr Gln Gln Leu Ala Gln Ala Thr Gly
20 25 30

Lys Pro Pro Gln Tyr Ile Ala Val His Val Val Pro Asp Gln Leu Met
35 40 45

Ala Phe Gly Gly Ser Ser Glu Pro Cys Ala Leu Cys Ser Leu His Ser
50 55 60

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Ile Gly Lys Ile Gly Gly Ala Gln Asn Arg Ser Tyr Ser Lys Leu Leu
65 70 75 80

Cys Gly Leu Leu Ala Glu Arg Leu Arg Ile Ser Pro Asp Arg Val Tyr
85 90 95

Ile Asn Tyr Tyr Asp Met Asn Ala Ala Asn Val Gly Trp Asn Asn Ser
100 105 110

Thr Phe Ala Leu Glu Asp Lys Thr His Thr Ser Pro Pro Cys Gly
115 120 125

<210> 313
<211> 126
<212> PRT
<213> Homo sapiens

<400> 313

Pro Met Phe Ile Val Asn Thr Asn Val Pro Arg Ala Ser Val Pro Asp
1 5 10 15

Gly Phe Leu Ser Glu Leu Thr Gln Gln Leu Ala Gln Ala Thr Gly Lys
20 25 30

Pro Pro Gln Tyr Ile Ala Val His Val Val Pro Asp Gln Leu Met Ala
35 40 45

Phe Gly Gly Ser Ser Glu Pro Cys Ala Leu Cys Ser Leu His Ser Ile
50 55 60

Gly Lys Ile Gly Gly Ala Gln Asn Arg Ser Tyr Ser Lys Leu Leu Cys
65 70 75 80

Gly Leu Leu Ala Glu Arg Leu Arg Ile Ser Pro Asp Arg Val Tyr Ile
85 90 95

Asn Tyr Tyr Asp Met Asn Ala Ala Asn Val Gly Trp Asn Asn Ser Thr
100 105 110

Phe Ala Leu Glu Asp Lys Thr His Thr Ser Pro Pro Cys Gly
115 120 125

<210> 314
<211> 135
<212> PRT
<213> Homo sapiens

<400> 314

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Met Pro Met Phe Ile Val Asn Thr Asn Val Pro Arg Ala Ser Val Pro
1 5 10 15

Asp Gly Phe Leu Ser Glu Leu Thr Gln Gln Leu Ala Gln Ala Thr Gly
20 25 30

Lys Pro Pro Gln Tyr Ile Ala Val His Val Val Pro Asp Gln Leu Met
35 40 45

Ala Phe Gly Gly Ser Ser Glu Pro Cys Ala Leu Cys Ser Leu His Ser
50 55 60

Ile Gly Lys Ile Gly Gly Ala Gln Asn Arg Ser Tyr Ser Lys Leu Leu
65 70 75 80

Cys Gly Leu Leu Ala Glu Arg Leu Arg Ile Ser Pro Asp Arg Val Tyr
85 90 95

Ile Asn Tyr Tyr Asp Met Asn Ala Ala Asn Val Gly Trp Asn Asn Ser
100 105 110

Thr Phe Ala Leu Glu Pro Lys Pro Ser Thr Pro Pro Gly Ser Ser Gly
115 120 125

Gly Ala Pro Gly Gly Cys Gly
130 135

<210> 315
<211> 134
<212> PRT
<213> Homo sapiens

<400> 315

Pro Met Phe Ile Val Asn Thr Asn Val Pro Arg Ala Ser Val Pro Asp
1 5 10 15

Gly Phe Leu Ser Glu Leu Thr Gln Gln Leu Ala Gln Ala Thr Gly Lys
20 25 30

Pro Pro Gln Tyr Ile Ala Val His Val Val Pro Asp Gln Leu Met Ala
35 40 45

Phe Gly Gly Ser Ser Glu Pro Cys Ala Leu Cys Ser Leu His Ser Ile
50 55 60

Gly Lys Ile Gly Gly Ala Gln Asn Arg Ser Tyr Ser Lys Leu Leu Cys
65 70 75 80

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Gly Leu Leu Ala Glu Arg Leu Arg Ile Ser Pro Asp Arg Val Tyr Ile
85 90 95

Asn Tyr Tyr Asp Met Asn Ala Ala Asn Val Gly Trp Asn Asn Ser Thr
100 105 110

Phe Ala Leu Glu Pro Lys Pro Ser Thr Pro Pro Gly Ser Ser Gly Gly
115 120 125

Ala Pro Gly Gly Cys Gly
130

<210> 316
<211> 62
<212> DNA
<213> Artificial Sequence

<220>
<223> RANKL-UP oligonucleotide

<400> 316
ctgccagggg cccgggtgcg gcggtggcca tcatcaccac catcaccagc gcttctcagg 60
ag 62

<210> 317
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> RANKL-down oligonucleotide

<400> 317
ccgctcgagt tagtctatgt cctgaacttt gaaag 35

<210> 318
<211> 419
<212> PRT
<213> Artificial Sequence

<220>
<223> GST-PS-C-RANKL construct

<400> 318

Met Ser Pro Ile Leu Gly Tyr Trp Lys Ile Lys Gly Leu Val Gln Pro
1 5 10 15

Thr Arg Leu Leu Leu Glu Tyr Leu Glu Glu Lys Tyr Glu Glu His Leu
20 25 30

Tyr Glu Arg Asp Glu Gly Asp Lys Trp Arg Asn Lys Lys Phe Glu Leu
35 40 45

Gly Leu Glu Phe Pro Asn Leu Pro Tyr Tyr Ile Asp Gly Asp Val Lys
50 55 60

Leu Thr Gln Ser Met Ala Ile Ile Arg Tyr Ile Ala Asp Lys His Asn
65 70 75 80

Met Leu Gly Gly Cys Pro Lys Glu Arg Ala Glu Ile Ser Met Leu Glu
85 90 95

Gly Ala Val Leu Asp Ile Arg Tyr Gly Val Ser Arg Ile Ala Tyr Ser
100 105 110

Lys Asp Phe Glu Thr Leu Lys Val Asp Phe Leu Ser Lys Leu Pro Glu
115 120 125

Met Leu Lys Met Phe Glu Asp Arg Leu Cys His Lys Thr Tyr Leu Asn
130 135 140

Gly Asp His Val Thr His Pro Asp Phe Met Leu Tyr Asp Ala Leu Asp
145 150 155 160

Val Val Leu Tyr Met Asp Pro Met Cys Leu Asp Ala Phe Pro Lys Leu
165 170 175

Val Cys Phe Lys Lys Arg Ile Glu Ala Ile Pro Gln Ile Asp Lys Tyr
180 185 190

Leu Lys Ser Ser Lys Tyr Ile Ala Trp Pro Leu Gln Gly Trp Gln Ala
195 200 205

Thr Phe Gly Gly Gly Asp His Pro Pro Lys Ser Asp Leu Glu Val Leu
210 215 220

Phe Gln Gly Pro Gly Cys Gly Gly Gly His His His His His His Gln
225 230 235 240

Arg Phe Ser Gly Ala Pro Ala Met Met Glu Gly Ser Trp Leu Asp Val
245 250 255

Ala Gln Arg Gly Lys Pro Glu Ala Gln Pro Phe Ala His Leu Thr Ile
260 265 270

Asn Ala Ala Ser Ile Pro Ser Gly Ser His Lys Val Thr Leu Ser Ser
275 280 285

Trp Tyr His Asp Arg Gly Trp Ala Lys Ile Ser Asn Met Thr Leu Ser

290		295		300
Asn Gly Lys Leu Arg Val Asn Gln Asp Gly Phe Tyr Tyr Leu Tyr Ala				
305		310	315	320
Asn Ile Cys Phe Arg His His Glu Thr Ser Gly Ser Val Pro Thr Asp				
	325		330	335
Tyr Leu Gln Leu Met Val Tyr Val Val Lys Thr Ser Ile Lys Ile Pro				
	340		345	350
Ser Ser His Asn Leu Met Lys Gly Gly Ser Thr Lys Asn Trp Ser Gly				
	355		360	365
Asn Ser Glu Phe His Phe Tyr Ser Ile Asn Val Gly Gly Phe Phe Lys				
	370		375	380
Leu Arg Ala Gly Glu Glu Ile Ser Ile Gln Val Ser Asn Pro Ser Leu				
	385		390	395
Leu Asp Pro Asp Gln Asp Ala Thr Tyr Phe Gly Ala Phe Lys Val Gln				
	405		410	415
Asp Ile Asp				

<210> 319
 <211> 1269
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> GST-PS-C-RANKL construct

<400> 319	
atgtccccta tactagggtta ttggaaaatt aagggccttg tgcaaccac tcgacttctt	60
ttggaatatc ttgaagaaaa atatgaagag catttgatg agcgcgatga aggtgataaa	120
tggcgaaaca aaaagtttga attgggtttg gagtttccca atcttcctta ttatattgat	180
ggtgatgtta aattaacaca gtctatggcc atcatagctt atatagctga caagcacaac	240
atgttgggtg gttgtccaaa agagcgtgca gagatttcaa tgcttgaagg agcggttttg	300
gatattagat acggtgtttc gagaattgca tatagtaaag actttgaaac tctcaaagtt	360
gattttctta gcaagctacc tgaaatgctg aaaatgttcg aagatcgttt atgtcataaa	420
acatatattaa atggtgatca tgtaacccat cctgacttca tgttgtatga cgctcttgat	480
gttggttttat acatggaccc aatgtgcctg gatgcgttcc caaaattagt ttgttttaaa	540

aaacgtattg aagctatccc acaaattgat aagtacttga aatccagcaa gtatatagca 600
 tggcctttgc agggctggca agccacgttt ggtgggtggcg accatcctcc aaaatcggat 660
 ctggaagtgc tgttccaggg gcccggtg gcggtggcc atcatcacca ccatcaccag 720
 cgcttctcag gagctccagc tatgatggaa ggctcatggt tggatgtggc ccagcgaggc 780
 aagcctgagg cccagccatt tgcacacctc accatcaatg ctgccagcat cccatcgggt 840
 tcccataaag tcactctgtc ctcttggtac cacgatcgag gctgggcca gatctctaac 900
 atgacgttaa gcaacggaaa actaagggtt aaccaagatg gcttctatta cctgtacgcc 960
 aacatttgct ttcggcatca tgaacatcg ggaagcgtag ctacagacta tcttcagctg 1020
 atggtgtatg tcgttaaaac cagcatcaaa atcccaagtt ctcataacct gatgaaagga 1080
 gggagcacga aaaactggtc gggcaattct gaattccact ttatttccat aaatgttggg 1140
 ggatttttca agctccgagc tggatgaaga attagcattc aggtgtccaa cccttccctg 1200
 ctggatccgg atcaagatgc gacgtacttt ggggctttca aagttcagga catagactaa 1260
 ctcgagcgg 1269

<210> 320
 <211> 185
 <212> PRT
 <213> Homo sapiens

<400> 320

Gly Cys Gly Gly Gly Gln His Ile Arg Ala Glu Lys Ala Met Val Asp
 1 5 10 15

Gly Ser Trp Leu Asp Leu Ala Lys Arg Ser Lys Leu Glu Ala Gln Pro
 20 25 30

Phe Ala His Leu Thr Ile Asn Ala Thr Asp Ile Pro Ser Gly Ser His
 35 40 45

Lys Val Ser Leu Ser Ser Trp Tyr His Asp Arg Gly Trp Ala Lys Ile
 50 55 60

Ser Asn Met Thr Phe Ser Asn Gly Lys Leu Ile Val Asn Gln Asp Gly
 65 70 75 80

Phe Tyr Tyr Leu Tyr Ala Asn Ile Cys Phe Arg His His Glu Thr Ser
 85 90 95

Gly Asp Leu Ala Thr Glu Tyr Leu Gln Leu Met Val Tyr Val Thr Lys
 100 105 110

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Thr Ser Ile Lys Ile Pro Ser Ser His Thr Leu Met Lys Gly Gly Ser
115 120 125

Thr Lys Tyr Trp Ser Gly Asn Ser Glu Phe His Phe Tyr Ser Ile Asn
130 135 140

Val Gly Gly Phe Phe Lys Leu Arg Ser Gly Glu Glu Ile Ser Ile Glu
145 150 155 160

Val Ser Asn Pro Ser Leu Leu Asp Pro Asp Gln Asp Ala Thr Tyr Phe
165 170 175

Gly Ala Phe Lys Val Arg Asp Ile Asp
180 185

<210> 321
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 5'PrP-BamHI

<400> 321
cgggatccca ccatggtggg gggccttgg

29

<210> 322
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 3'PrP-NheI

<400> 322
ctagctagcc tggatcttct cccg

24

<210> 323
<211> 350
<212> PRT
<213> Artificial Sequence

<220>
<223> mPrPt-EK-Fc construct

<400> 323

Met Val Gly Gly Leu Gly Gly Tyr Met Leu Gly Ser Ala Met Ser Arg
1 5 10 15

Pro Met Ile His Phe Gly Asn Asp Trp Glu Asp Arg Tyr Tyr Arg Glu
20 25 30

Asn	Met	Tyr	Arg	Tyr	Pro	Asn	Gln	Val	Tyr	Tyr	Arg	Pro	Val	Asp	Gln
	35						40					45			
Tyr	Ser	Asn	Gln	Asn	Asn	Phe	Val	His	Asp	Cys	Val	Asn	Ile	Thr	Ile
	50					55					60				
Lys	Gln	His	Thr	Val	Thr	Thr	Thr	Thr	Lys	Gly	Glu	Asn	Phe	Thr	Glu
65					70					75					80
Thr	Asp	Val	Lys	Met	Met	Glu	Arg	Val	Val	Glu	Gln	Met	Cys	Val	Thr
				85					90					95	
Gln	Tyr	Gln	Lys	Glu	Ser	Gln	Ala	Tyr	Tyr	Asp	Gly	Arg	Ser	Arg	Leu
			100					105					110		
Ala	Gly	Gly	Gly	Gly	Cys	Gly	Asp	Asp	Asp	Asp	Lys	Leu	Thr	His	Thr
		115					120					125			
Cys	Pro	Pro	Cys	Pro	Ala	Pro	Glu	Ala	Glu	Gly	Ala	Pro	Ser	Val	Phe
	130					135					140				
Leu	Phe	Pro	Pro	Lys	Pro	Lys	Asp	Thr	Leu	Met	Ile	Ser	Arg	Thr	Pro
145					150					155					160
Glu	Val	Thr	Cys	Val	Val	Val	Asp	Val	Ser	His	Glu	Asp	Pro	Glu	Val
				165					170					175	
Lys	Phe	Asn	Trp	Tyr	Val	Asp	Gly	Val	Glu	Val	His	Asn	Ala	Lys	Thr
			180					185					190		
Lys	Pro	Arg	Glu	Glu	Gln	Tyr	Asn	Ser	Thr	Tyr	Arg	Val	Val	Ser	Val
		195					200					205			
Leu	Thr	Val	Leu	His	Gln	Asp	Trp	Leu	Asn	Gly	Lys	Glu	Tyr	Lys	Cys
	210					215					220				
Lys	Val	Ser	Asn	Lys	Ala	Leu	Pro	Ala	Ser	Ile	Glu	Lys	Thr	Ile	Ser
225					230					235					240
Lys	Ala	Lys	Gly	Gln	Pro	Arg	Glu	Pro	Gln	Val	Tyr	Thr	Leu	Pro	Pro
				245					250					255	
Ser	Arg	Asp	Glu	Leu	Thr	Lys	Asn	Gln	Val	Ser	Leu	Thr	Cys	Leu	Val
			260					265					270		
Lys	Gly	Phe	Tyr	Pro	Ser	Asp	Ile	Ala	Val	Glu	Trp	Glu	Ser	Asn	Gly
		275					280					285			

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Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
290 295 300

Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
305 310 315 320

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
325 330 335

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
340 345 350

<210> 324
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> mPrPt construct

<400> 324

Met Val Gly Gly Leu Gly Gly Tyr Met Leu Gly Ser Ala Met Ser Arg
1 5 10 15

Pro Met Ile His Phe Gly Asn Asp Trp Glu Asp Arg Tyr Tyr Arg Glu
20 25 30

Asn Met Tyr Arg Tyr Pro Asn Gln Val Tyr Tyr Arg Pro Val Asp Gln
35 40 45

Tyr Ser Asn Gln Asn Asn Phe Val His Asp Cys Val Asn Ile Thr Ile
50 55 60

Lys Gln His Thr Val Thr Thr Thr Thr Lys Gly Glu Asn Phe Thr Glu
65 70 75 80

Thr Asp Val Lys Met Met Glu Arg Val Val Glu Gln Met Cys Val Thr
85 90 95

Gln Tyr Gln Lys Glu Ser Gln Ala Tyr Tyr Asp Gly Arg Ser Arg Leu
100 105 110

Ala Gly Gly Gly Gly Cys Gly Asp Asp Asp Asp Lys
115 120

<210> 325
<211> 102
<212> PRT

<213> Artificial Sequence

<220>

<223> human resistin-C-Xa construct

<400> 325

Ser Ser Lys Thr Leu Cys Ser Met Glu Glu Ala Ile Asn Glu Arg Ile
1 5 10 15

Gln Glu Val Ala Gly Ser Leu Ile Phe Arg Ala Ile Ser Ser Ile Gly
20 25 30

Leu Glu Cys Gln Ser Val Thr Ser Arg Gly Asp Leu Ala Thr Cys Pro
35 40 45

Arg Gly Phe Ala Val Thr Gly Cys Thr Cys Gly Ser Ala Cys Gly Ser
50 55 60

Trp Asp Val Arg Ala Glu Thr Thr Cys His Cys Gln Cys Ala Gly Met
65 70 75 80

Asp Trp Thr Gly Ala Arg Cys Cys Arg Val Gln Pro Gly Gly Gly Gly
85 90 95

Cys Gly Ile Glu Gly Arg
100

<210> 326

<211> 103

<212> PRT

<213> Artificial Sequence

<220>

<223> human resistin-C-EK construct

<400> 326

Ser Ser Lys Thr Leu Cys Ser Met Glu Glu Ala Ile Asn Glu Arg Ile
1 5 10 15

Gln Glu Val Ala Gly Ser Leu Ile Phe Arg Ala Ile Ser Ser Ile Gly
20 25 30

Leu Glu Cys Gln Ser Val Thr Ser Arg Gly Asp Leu Ala Thr Cys Pro
35 40 45

Arg Gly Phe Ala Val Thr Gly Cys Thr Cys Gly Ser Ala Cys Gly Ser
50 55 60

Trp Asp Val Arg Ala Glu Thr Thr Cys His Cys Gln Cys Ala Gly Met

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<210> 328
<211> 132
<212> PRT
<213> Artificial Sequence
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```
<220>
<223> mouse C-IL-13-F construct
```

<400> 328

Ala Asp Pro Gly Cys Gly Gly Gly Gly Gly Leu Ala Gly Pro Val Pro
1 5 10 15

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Arg Ser Val Ser Leu Pro Leu Thr Leu Lys Glu Leu Ile Glu Glu Leu
20 25 30

Ser Asn Ile Thr Gln Asp Gln Thr Pro Leu Cys Asn Gly Ser Met Val
35 40 45

Trp Ser Val Asp Leu Ala Ala Gly Gly Phe Cys Val Ala Leu Asp Ser
50 55 60

Leu Thr Asn Ile Ser Asn Cys Asn Ala Ile Tyr Arg Thr Gln Arg Ile
65 70 75 80

Leu His Gly Leu Cys Asn Arg Lys Ala Pro Thr Thr Val Ser Ser Leu
85 90 95

Pro Asp Thr Lys Ile Glu Val Ala His Phe Ile Thr Lys Leu Leu Ser
100 105 110

Tyr Thr Lys Gln Leu Phe Arg His Gly Pro Phe Leu Glu Val Leu Ala
115 120 125

Ile Glu Gly Arg
130

<210> 329

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> mouse C-IL-13-S construct

<400> 329

Leu Ala Cys Gly Gly Gly Gly Gly Gly Pro Val Pro Arg Ser Val Ser
1 5 10 15

Leu Pro Leu Thr Leu Lys Glu Leu Ile Glu Glu Leu Ser Asn Ile Thr
20 25 30

Gln Asp Gln Thr Pro Leu Cys Asn Gly Ser Met Val Trp Ser Val Asp
35 40 45

Leu Ala Ala Gly Gly Phe Cys Val Ala Leu Asp Ser Leu Thr Asn Ile
50 55 60

Ser Asn Cys Asn Ala Ile Tyr Arg Thr Gln Arg Ile Leu His Gly Leu
65 70 75 80

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Cys Asn Arg Lys Ala Pro Thr Thr Val Ser Ser Leu Pro Asp Thr Lys
85 90 95

Ile Glu Val Ala His Phe Ile Thr Lys Leu Leu Ser Tyr Thr Lys Gln
100 105 110

Leu Phe Arg His Gly Pro Phe
115

<210> 330

<211> 133

<212> PRT

<213> Artificial Sequence

<220>

<223> human C-IL-13-F construct

<400> 330

Ala Asp Pro Gly Cys Gly Gly Gly Gly Gly Leu Ala Gly Pro Val Pro
1 5 10 15

Pro Ser Thr Ala Leu Arg Glu Leu Ile Glu Glu Leu Val Asn Ile Thr
20 25 30

Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met Val Trp Ser Ile
35 40 45

Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Glu Ser Leu Ile Asn
50 55 60

Val Ser Gly Cys Ser Ala Ile Glu Lys Thr Gln Arg Met Leu Ser Gly
65 70 75 80

Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser Ser Leu His Val
85 90 95

Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Lys Asp Leu Leu Leu
100 105 110

His Leu Lys Lys Leu Phe Arg Glu Gly Arg Phe Asn Leu Glu Val Leu
115 120 125

Ala Ile Glu Gly Arg
130

<210> 331

<211> 120

<212> PRT

<213> Artificial Sequence

<220>

<223> human C-IL-13-S construct

<400> 331

Leu Ala Cys Gly Gly Gly Gly Gly Gly Pro Val Pro Pro Ser Thr Ala
1 5 10 15

Leu Arg Glu Leu Ile Glu Glu Leu Val Asn Ile Thr Gln Asn Gln Lys
20 25 30

Ala Pro Leu Cys Asn Gly Ser Met Val Trp Ser Ile Asn Leu Thr Ala
35 40 45

Gly Met Tyr Cys Ala Ala Leu Glu Ser Leu Ile Asn Val Ser Gly Cys
50 55 60

Ser Ala Ile Glu Lys Thr Gln Arg Met Leu Ser Gly Phe Cys Pro His
65 70 75 80

Lys Val Ser Ala Gly Gln Phe Ser Ser Leu His Val Arg Asp Thr Lys
85 90 95

Ile Glu Val Ala Gln Phe Val Lys Asp Leu Leu Leu His Leu Lys Lys
100 105 110

Leu Phe Arg Glu Gly Arg Phe Asn
115 120

<210> 332

<211> 136

<212> PRT

<213> Artificial Sequence

<220>

<223> mouse C-IL-5-E construct

<400> 332

Ala Leu Val Gly Cys Gly Gly Pro Lys Pro Ser Thr Pro Pro Gly Ser
1 5 10 15

Ser Gly Gly Ala Pro Ala Ser Met Glu Ile Pro Met Ser Thr Val Val
20 25 30

Lys Glu Thr Leu Thr Gln Leu Ser Ala His Arg Ala Leu Leu Thr Ser
35 40 45

Asn Glu Thr Met Arg Leu Pro Val Pro Thr His Lys Asn His Gln Leu
50 55 60

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Cys Ile Gly Glu Ile Phe Gln Gly Leu Asp Ile Leu Lys Asn Gln Thr
65 70 75 80

Val Arg Gly Gly Thr Val Glu Met Leu Phe Gln Asn Leu Ser Leu Ile
85 90 95

Lys Lys Tyr Ile Asp Arg Gln Lys Glu Lys Cys Gly Glu Glu Arg Arg
100 105 110

Arg Thr Arg Gln Phe Leu Asp Tyr Leu Gln Glu Phe Leu Gly Val Met
115 120 125

Ser Thr Glu Trp Ala Met Glu Gly
130 135

<210> 333

<211> 134

<212> PRT

<213> Artificial Sequence

<220>

<223> mouse C-IL-5-F construct

<400> 333

Ala Asp Pro Gly Cys Gly Gly Gly Gly Gly Leu Ala Met Glu Ile Pro
1 5 10 15

Met Ser Thr Val Val Lys Glu Thr Leu Thr Gln Leu Ser Ala His Arg
20 25 30

Ala Leu Leu Thr Ser Asn Glu Thr Met Arg Leu Pro Val Pro Thr His
35 40 45

Lys Asn His Gln Leu Cys Ile Gly Glu Ile Phe Gln Gly Leu Asp Ile
50 55 60

Leu Lys Asn Gln Thr Val Arg Gly Gly Thr Val Glu Met Leu Phe Gln
65 70 75 80

Asn Leu Ser Leu Ile Lys Lys Tyr Ile Asp Arg Gln Lys Glu Lys Cys
85 90 95

Gly Glu Glu Arg Arg Arg Thr Arg Gln Phe Leu Asp Tyr Leu Gln Glu
100 105 110

Phe Leu Gly Val Met Ser Thr Glu Trp Ala Met Glu Gly Leu Glu Val
115 120 125

Leu Ala Ile Glu Gly Arg
130

<210> 334
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> mouse C-IL-5-S construct

<400> 334

Leu Ala Cys Gly Gly Gly Gly Gly Met Glu Ile Pro Met Ser Thr Val
1 5 10 15

Val Lys Glu Thr Leu Thr Gln Leu Ser Ala His Arg Ala Leu Leu Thr
20 25 30

Ser Asn Glu Thr Met Arg Leu Pro Val Pro Thr His Lys Asn His Gln
35 40 45

Leu Cys Ile Gly Glu Ile Phe Gln Gly Leu Asp Ile Leu Lys Asn Gln
50 55 60

Thr Val Arg Gly Gly Thr Val Glu Met Leu Phe Gln Asn Leu Ser Leu
65 70 75 80

Ile Lys Lys Tyr Ile Asp Arg Gln Lys Glu Lys Cys Gly Glu Glu Arg
85 90 95

Arg Arg Thr Arg Gln Phe Leu Asp Tyr Leu Gln Glu Phe Leu Gly Val
100 105 110

Met Ser Thr Glu Trp Ala Met Glu Gly
115 120

<210> 335
<211> 138
<212> PRT
<213> Artificial Sequence

<220>
<223> human C-IL-5-E construct

<400> 335

Ala Leu Val Gly Cys Gly Gly Pro Lys Pro Ser Thr Pro Pro Gly Ser
1 5 10 15

Ser Gly Gly Ala Pro Ala Ser Ile Pro Thr Glu Ile Pro Thr Ser Ala
20 25 30

Leu Val Lys Glu Thr Leu Ala Leu Leu Ser Thr His Arg Thr Leu Leu
35 40 45

Ile Ala Asn Glu Thr Leu Arg Ile Pro Val Pro Val His Lys Asn His
50 55 60

Gln Leu Cys Thr Glu Glu Ile Phe Gln Gly Ile Gly Thr Leu Glu Ser
65 70 75 80

Gln Thr Val Gln Gly Gly Thr Val Glu Arg Leu Phe Lys Asn Leu Ser
85 90 95

Leu Ile Lys Lys Tyr Ile Asp Gly Gln Lys Lys Lys Cys Gly Glu Glu
100 105 110

Arg Arg Arg Val Asn Gln Phe Leu Asp Tyr Leu Gln Glu Phe Leu Gly
115 120 125

Val Met Asn Thr Glu Trp Ile Ile Glu Ser
130 135

<210> 336
<211> 136
<212> PRT
<213> Artificial Sequence

<220>
<223> human C-IL-5-F construct

<400> 336

Ala Asp Pro Gly Cys Gly Gly Gly Gly Gly Leu Ala Ile Pro Thr Glu
1 5 10 15

Ile Pro Thr Ser Ala Leu Val Lys Glu Thr Leu Ala Leu Leu Ser Thr
20 25 30

His Arg Thr Leu Leu Ile Ala Asn Glu Thr Leu Arg Ile Pro Val Pro
35 40 45

Val His Lys Asn His Gln Leu Cys Thr Glu Glu Ile Phe Gln Gly Ile
50 55 60

Gly Thr Leu Glu Ser Gln Thr Val Gln Gly Gly Thr Val Glu Arg Leu
65 70 75 80

Phe Lys Asn Leu Ser Leu Ile Lys Lys Tyr Ile Asp Gly Gln Lys Lys
85 90 95

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Lys Cys Gly Glu Glu Arg Arg Arg Val Asn Gln Phe Leu Asp Tyr Leu
100 105 110

Gln Glu Phe Leu Gly Val Met Asn Thr Glu Trp Ile Ile Glu Ser Leu
115 120 125

Glu Val Leu Ala Ile Glu Gly Arg
130 135

<210> 337
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> human C-IL-5-S construct

<400> 337

Leu Ala Cys Gly Gly Gly Gly Gly Ile Pro Thr Glu Ile Pro Thr Ser
1 5 10 15

Ala Leu Val Lys Glu Thr Leu Ala Leu Leu Ser Thr His Arg Thr Leu
20 25 30

Leu Ile Ala Asn Glu Thr Leu Arg Ile Pro Val Pro Val His Lys Asn
35 40 45

His Gln Leu Cys Thr Glu Glu Ile Phe Gln Gly Ile Gly Thr Leu Glu
50 55 60

Ser Gln Thr Val Gln Gly Gly Thr Val Glu Arg Leu Phe Lys Asn Leu
65 70 75 80

Ser Leu Ile Lys Lys Tyr Ile Asp Gly Gln Lys Lys Lys Cys Gly Glu
85 90 95

Glu Arg Arg Arg Val Asn Gln Phe Leu Asp Tyr Leu Gln Glu Phe Leu
100 105 110

Gly Val Met Asn Thr Glu Trp Ile Ile Glu Ser
115 120

<210> 338
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<223> primer NheIL13-F

<400> 338

Cys Thr Ala Gly Cys Thr Ala Gly Cys Cys Gly Gly Gly Cys Cys Gly
1 5 10 15

Gly Thr Gly Cys Cys Ala Ala Gly Ala Thr Cys
20 25

<210> 339

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> primer XhoIL13-R

<400> 339

tttctcgagg aaggggccgt ggcgaa

26

<210> 340

<211> 55

<212> DNA

<213> Artificial Sequence

<220>

<223> primer Spelinker3-F1

<400> 340

ccccgccggg ttcttctggc ggtgctccgg ctagcatgga gattcccatg agcac

55

<210> 341

<211> 52

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer SpeNlinker3-F2

<400> 341

ttttactagt tggttgcggc ggcccgaaac cgagcacccc gccgggttct tc

52

<210> 342

<211> 49

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer IL5StopXho-R

<400> 342

ttttgcggcc gcgttttaaac tcgagttatt agccttccat tgcccactc

49

<210> 343

<211> 25

<212> DNA

<213> Artificial Sequence

<220>
<223> Primer BamH1-FLK1-F

<400> 343
cgcggtacca ttcatgcgct ctgtc

25

<210> 344
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer Nhe1-FLK1-B

<400> 344
ctagctagct ttgtgtgaac tcggac

26

<210> 345
<211> 205
<212> PRT
<213> Artificial Sequence

<220>
<223> mVEGFR-2 (2-3) fragment

<400> 345

Pro Phe Ile Ala Ser Val Ser Asp Gln His Gly Ile Val Tyr Ile Thr
1 5 10 15

Glu Asn Lys Asn Lys Thr Val Val Ile Pro Cys Arg Gly Ser Ile Ser
20 25 30

Asn Leu Asn Val Ser Leu Cys Ala Arg Tyr Pro Glu Lys Arg Phe Val
35 40 45

Pro Asp Gly Asn Arg Ile Ser Trp Asp Ser Glu Ile Gly Phe Thr Leu
50 55 60

Pro Ser Tyr Met Ile Ser Tyr Ala Gly Met Val Phe Cys Glu Ala Lys
65 70 75 80

Ile Asn Asp Glu Thr Tyr Gln Ser Ile Met Tyr Ile Val Val Val Val
85 90 95

Gly Tyr Arg Ile Tyr Asp Val Ile Leu Ser Pro Pro His Glu Ile Glu
100 105 110

Leu Ser Ala Gly Glu Lys Leu Val Leu Asn Cys Thr Ala Arg Thr Glu
115 120 125

Leu Asn Val Gly Leu Asp Phe Thr Trp His Ser Pro Pro Ser Lys Ser

130	135	140
His His Lys Lys Ile Val Asn Arg Asp Val Lys Pro Phe Pro Gly Thr		
145	150	155 160
Val Ala Lys Met Phe Leu Ser Thr Leu Thr Ile Glu Ser Val Thr Lys		
	165	170 175
Ser Asp Gln Gly Glu Tyr Thr Cys Val Ala Ser Ser Gly Arg Met Ile		
	180	185 190
Lys Arg Asn Arg Thr Phe Val Arg Val His Thr Lys Pro		
	195	200 205
<210> 346		
<211> 263		
<212> PRT		
<213> Artificial Sequence		
<220>		
<223> human C-LT_49-306 fragment		
<400> 346		
Leu Ala Cys Gly Gly Gln Asp Gln Gly Arg Arg Val Glu Lys Ile Ile		
1	5	10 15
Gly Ser Gly Ala Gln Ala Gln Lys Arg Leu Asp Asp Ser Lys Pro Ser		
	20	25 30
Cys Ile Leu Pro Ser Pro Ser Ser Leu Ser Glu Thr Pro Asp Pro Arg		
	35	40 45
Leu His Pro Gln Arg Ser Asn Ala Ser Arg Asn Leu Ala Ser Thr Ser		
	50	55 60
Gln Gly Pro Val Ala Gln Ser Ser Arg Glu Ala Ser Ala Trp Met Thr		
65	70	75 80
Ile Leu Ser Pro Ala Ala Asp Ser Thr Pro Asp Pro Gly Val Gln Gln		
	85	90 95
Leu Pro Lys Gly Glu Pro Glu Thr Asp Leu Asn Pro Glu Leu Pro Ala		
	100	105 110
Ala His Leu Ile Gly Ala Trp Met Ser Gly Gln Gly Leu Ser Trp Glu		
	115	120 125
Ala Ser Gln Glu Glu Ala Phe Leu Arg Ser Gly Ala Gln Phe Ser Pro		

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130 135 140

Thr His Gly Leu Ala Leu Pro Gln Asp Gly Val Tyr Tyr Leu Tyr Cys
145 150 155 160

His Val Gly Tyr Arg Gly Arg Thr Pro Pro Ala Gly Arg Ser Arg Ala
165 170 175

Arg Ser Leu Thr Leu Arg Ser Ala Leu Tyr Arg Ala Gly Gly Ala Tyr
180 185 190

Gly Arg Gly Ser Pro Glu Leu Leu Leu Glu Gly Ala Glu Thr Val Thr
195 200 205

Pro Val Val Asp Pro Ile Gly Tyr Gly Ser Leu Trp Tyr Thr Ser Val
210 215 220

Gly Phe Gly Gly Leu Ala Gln Leu Arg Ser Gly Glu Arg Val Tyr Val
225 230 235 240

Asn Ile Ser His Pro Asp Met Val Asp Tyr Arg Arg Gly Lys Thr Phe
245 250 255

Phe Gly Ala Val Met Val Gly
260

<210> 347
<211> 186
<212> PRT
<213> Artificial Sequence

<220>
<223> human C-LT_126-306 fragment

<400> 347

Leu Ala Cys Gly Gly Ser Pro Ala Ala Asp Ser Thr Pro Asp Pro Gly
1 5 10 15

Val Gln Gln Leu Pro Lys Gly Glu Pro Glu Thr Asp Leu Asn Pro Glu
20 25 30

Leu Pro Ala Ala His Leu Ile Gly Ala Trp Met Ser Gly Gln Gly Leu
35 40 45

Ser Trp Glu Ala Ser Gln Glu Glu Ala Phe Leu Arg Ser Gly Ala Gln
50 55 60

Phe Ser Pro Thr His Gly Leu Ala Leu Pro Gln Asp Gly Val Tyr Tyr

65		70		75		80									
Leu	Tyr	Cys	His	Val	Gly	Tyr	Arg	Gly	Arg	Thr	Pro	Pro	Ala	Gly	Arg
				85				90						95	
Ser	Arg	Ala	Arg	Ser	Leu	Thr	Leu	Arg	Ser	Ala	Leu	Tyr	Arg	Ala	Gly
			100					105					110		
Gly	Ala	Tyr	Gly	Arg	Gly	Ser	Pro	Glu	Leu	Leu	Leu	Glu	Gly	Ala	Glu
		115					120					125			
Thr	Val	Thr	Pro	Val	Val	Asp	Pro	Ile	Gly	Tyr	Gly	Ser	Leu	Trp	Tyr
	130					135					140				
Thr	Ser	Val	Gly	Phe	Gly	Gly	Leu	Ala	Gln	Leu	Arg	Ser	Gly	Glu	Arg
145					150					155					160
Val	Tyr	Val	Asn	Ile	Ser	His	Pro	Asp	Met	Val	Asp	Tyr	Arg	Arg	Gly
				165					170					175	
Lys	Thr	Phe	Phe	Gly	Ala	Val	Met	Val	Gly						
			180					185							

<210> 348
 <211> 117
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Modified human prion protein fragment

<400> 348

Val	Gly	Gly	Leu	Gly	Gly	Tyr	Met	Leu	Gly	Ser	Ala	Met	Ser	Arg	Pro
1				5					10					15	
Ile	Ile	His	Phe	Gly	Ser	Asp	Tyr	Glu	Asp	Arg	Tyr	Tyr	Arg	Glu	Asn
			20					25					30		
Met	His	Arg	Tyr	Pro	Asn	Gln	Val	Tyr	Tyr	Arg	Pro	Met	Asp	Glu	Tyr
		35					40					45			
Ser	Asn	Gln	Asn	Asn	Phe	Val	His	Asp	Cys	Val	Asn	Ile	Thr	Ile	Lys
	50					55					60				
Gln	His	Thr	Val	Thr	Thr	Thr	Lys	Gly	Glu	Asn	Phe	Thr	Glu	Thr	
65					70				75					80	
Asp	Val	Lys	Met	Met	Glu	Arg	Val	Val	Glu	Gln	Met	Cys	Ile	Thr	Gln

85

90

95

Tyr Glu Arg Glu Ser Gln Ala Tyr Tyr Gln Arg Gly Arg Leu Ala Gly
100 105 110

Gly Gly Gly Cys Gly
115

<210> 349
<211> 117
<212> PRT
<213> Artificial Sequence

<220>
<223> Modified bovine prion protein fragment

<400> 349

Val Gly Gly Leu Gly Gly Tyr Met Leu Gly Ser Ala Met Ser Arg Pro
1 5 10 15

Leu Ile His Phe Gly Ser Asp Tyr Glu Asp Arg Tyr Tyr Arg Glu Asn
20 25 30

Met His Arg Tyr Pro Asn Gln Val Tyr Tyr Arg Pro Val Asp Gln Tyr
35 40 45

Ser Asn Gln Asn Asn Phe Val His Asp Cys Val Asn Ile Thr Val Lys
50 55 60

Glu His Thr Val Thr Thr Thr Thr Lys Gly Glu Asn Phe Thr Glu Thr
65 70 75 80

Asp Ile Lys Met Met Glu Arg Val Val Glu Gln Met Cys Ile Thr Gln
85 90 95

Tyr Gln Arg Glu Ser Gln Ala Tyr Tyr Gln Arg Gly Arg Leu Ala Gly
100 105 110

Gly Gly Gly Cys Gly
115

<210> 350
<211> 117
<212> PRT
<213> Artificial Sequence

<220>
<223> Modified sheep prion protein fragment

<400> 350

Val Gly Gly Leu Gly Gly Tyr Met Leu Gly Ser Ala Met Ser Arg Pro
1 5 10 15

Leu Ile His Phe Gly Asn Asp Tyr Glu Asp Arg Tyr Tyr Arg Glu Asn
20 25 30

Met Tyr Arg Tyr Pro Asn Gln Val Tyr Tyr Arg Pro Val Asp Arg Tyr
35 40 45

Ser Asn Gln Asn Asn Phe Val His Asp Cys Val Asn Ile Thr Val Lys
50 55 60

Gln His Thr Val Thr Thr Thr Thr Lys Gly Glu Asn Phe Thr Glu Thr
65 70 75 80

Asp Ile Lys Ile Met Glu Arg Val Val Glu Gln Met Cys Ile Thr Gln
85 90 95

Tyr Gln Arg Glu Ser Gln Ala Tyr Tyr Gln Arg Gly Arg Leu Ala Gly
100 105 110

Gly Gly Gly Cys Gly
115